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Backwoods



Home magazine

March/April 2000

No. 62

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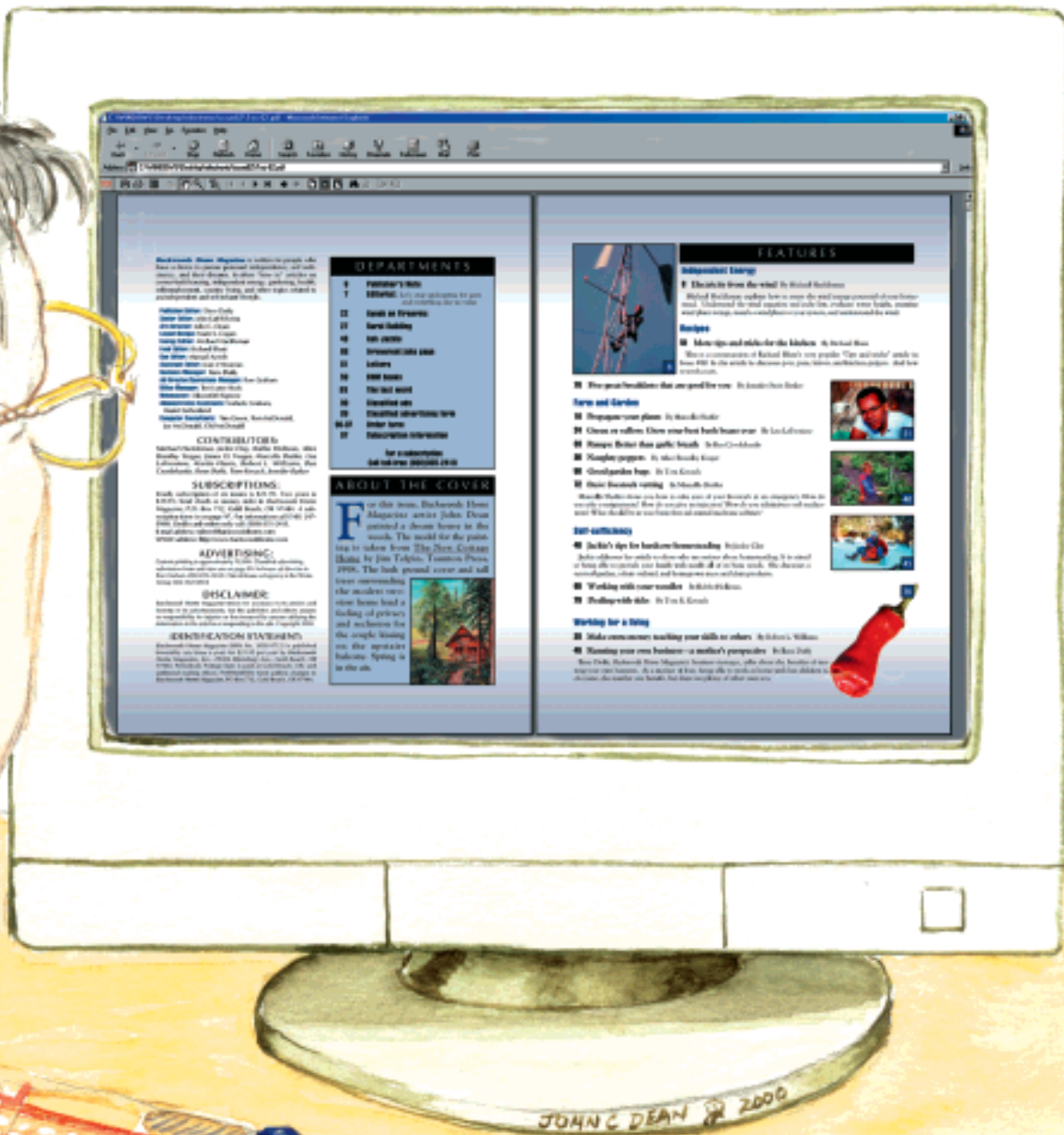
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The Power of the Sun Within Reach

Backwoods Home Magazine is written for people who have a desire to pursue personal independence, self sufficiency, and their dreams. It offers "how to" articles on owner-built housing, independent energy, gardening, health, self-employment, country living, and other topics related to an independent and self-reliant lifestyle.

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SUBSCRIPTIONS:

Yearly subscription of six issues is \$21.95. Two years is \$39.95. Send check or money order to *Backwoods Home Magazine*, P.O. Box 712, Gold Beach, OR 97444. A subscription form is on page 97. For information call (541) 247-8900. Credit card orders only call: (800) 835-2418.

E-mail address: editors@backwoodshome.com

WWW address: <http://www.backwoodshome.com>

ADVERTISING:

Current printing is approximately 52,000. Classified advertising submission form and rates are on page 89. In-house ad director is Ron Graham (800-835-2418). Out-of-house ad agency is the Weiss Group (602-482-8844)

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IDENTIFICATION STATEMENT:

Backwoods Home Magazine (ISSN No. 1050-9712) is published bimonthly (six times a year) for \$21.95 per year by *Backwoods Home Magazine, Inc.*, 29304 Ellensburg Ave., Gold Beach, OR 97444. Periodicals Postage Rate is paid at Gold Beach, OR, and additional mailing offices. POSTMASTER: Send address changes to *Backwoods Home Magazine*, PO Box 712, Gold Beach, OR 97444.

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ABOUT THE COVER

For this issue, *Backwoods Home Magazine* artist John Dean painted a dream house in the woods. The model for the painting is taken from *The New Cottage Home* by Jim Tolpin, Taunton Press, 1998. The lush ground cover and tall trees surrounding the modest two-story home lend a feeling of privacy and seclusion for the couple kissing on the upstairs balcony. Spring is in the air.





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Publisher's Note

Distribution war heats up

If all you non-subscribers had more than the usual amount of difficulty finding *Backwoods Home Magazine* on the newsstand last issue, you'll probably have even more trouble this month. A major upheaval is taking place in the newsstand distribution business, with most magazine wholesalers having been bought out by a couple of major wholesalers during the past two years. The two major winners in this consolidation—*Andersen News Company*, which now controls 45% of all newsstands, and *The News Group*, which controls another 20%—are feeling the financial pinch of their quick acquisitions and are demanding that publishers like *BHM* pay more to distribute their titles.

Actually, it's much more sinister than that. They are not demanding that all publishers pay more, but just the "smaller" magazines like *BHM*. The following quote, from a letter sent to the small publishers by *The News Group's* president, Gil Brechtel, sums up the situation:

The goal of our extensive title analysis was to identify the group of titles that contribute to retail sales most significantly. We found that roughly 1400 titles represent 94% of our sales. These core titles are in every magazine category and sub-category we distribute, but have a disappointing average sales efficiency of 39%, which is too low. However, the remaining 1600 regular frequency titles that we distribute have a unit sales efficiency of 19% and represent only 6% of our sales. These non-core titles have added waste, inefficiency and additional costs to the system and in our opinion, have impeded overall sales growth."

We have been identified as a "non-core" title, and our sales efficiency with them is low—about 38%. So we and many of the other small publishers told *Andersen News* and *The News Group* to go fly a kite.

Smaller magazines like *BHM* have been building our own markets on the Internet because we have grown weary of the bullying dictatorships that have been distributing our magazines for years. We have never before had much recourse but to acquiesce to the demands of these powerful distributors, but now we have the Internet which has no dictators, no bosses, no outrageous fees to pay for the privilege of being put before the public. This latest ultimatum by these bigger-than-ever distributor dictators is their death rattle. The Internet is in the process of replacing them, and they are in a rage that most of us small publishers are no longer playing by their rules.

For those of you who still want to buy *BHM* at the newsstands, we are still sold in the following major bookstores, which are not controlled by *Andersen News* or *The News*

Group: Barnes & Noble Superstores, Borders, Walden, Books a Million, Hastings, B. Dalton, Little Professor, Bookstops, Shinders, and Brentanos. Most of these outlets are supplied by Ingram, a distributor which has announced they will increase the number of copies of *BHM* they carry. Unfortunately, *Andersen News* controls Wal-Mart distribution so we will be forced out of Wal-Mart.

Print subscription price rises to \$21.95, But new online subscription just \$10.95

All of which is a good lead-in to announce that *BHM* is now offering an online subscription at backwoodshome.com for \$10.95. The online issue is identical to this print issue, ads and all. We can offer it at the low price of \$10.95 per year because we incur no paper costs or distribution costs to deliver it to you. The cost of an annual print subscription, beginning with this issue, has gone from \$19.95 to \$21.95 to pay for increased paper costs. A combined print and online subscription is only \$26.95, or just \$5 over the print issue price. This combination may be attractive to people who want the conveniences of both—a hard copy edition to read in the bathroom or on a trip, and an online edition so you can cut and paste articles to send to friends. Keep in mind also that John Silveira and I now write a weekly column online at backwoodshome.com. The costs of production and distribution drive all these things. The Internet is cheap to use, so we can pass the savings on to you.

Survey — pages 70 and 71

Notice the survey on pages 70-71. It's the first survey we've done in several years and it's similar to one we are currently doing online at backwoodshome.com. We'd appreciate it if you'd fill it out. It's an anonymous survey, so you can tell us what you really think.

Final "back issue set" winner

James Boblenz of Marion, Ohio is our final winner of a complete set of back issues. We are just about out of complete sets of back issues.

Pocket *U.S. Constitution* book free

With each new subscription or renewal, whether it's a print subscription or online subscription, we're giving away our 58-page pocket book containing the *U.S. Constitution* with amendments and the *Declaration of Independence*. This beautiful perfect-bound little book fits right in your shirt pocket. We've given out or sold 7,000 of them already. See page 26 for details. Δ

My view

Let's stop apologizing for guns

I carry a concealed Ruger P97 .45 caliber eight-shot semi-automatic handgun almost everywhere I go, and I keep a Ruger Mini-14 semi-automatic rifle with folding stock in my home—within easy reach. The ammunition clips of both hold bullets designed to kill a violent criminal instantaneously, before he can take another step or move his hand another inch. I don't keep gun locks on these weapons, and I don't apologize for them. And it's not just because it is my Constitutional right to keep guns, although that is reason enough. It is because I have been convinced by overwhelming evidence that guns keep me and my family safe.

Does that sound like the rantings of a paranoid, gun-toting nut? Probably, if you are a paranoid, gun-grabbing ignoramus who knows nothing about guns and the role they play daily in American society in the prevention of crime. To those of you who do know the relationship of gun and crime statistics, the weapons I keep probably make a lot of sense.

We who own guns for self protection have been much maligned by those who think guns are evil, even though the statistics about gun use show that guns are used far more often by average citizens to prevent violent crime than they are used by criminals to commit crimes. Now the evidence is greater than ever, thanks to the largest and most accurate study ever undertaken. It was performed by John Lott, a senior research scholar at Yale Law School who had never owned a gun and who had spent most of his career doing research on nongun-related issues. The study's findings are contained in his scholarly 1998 book, More Guns, Less Crime (University of Chicago Press), which is a detailed analysis of 18 years of the gun/crime relationship in all 3,000-plus counties in the United States. After Lott finished the study, he went out and bought his first gun.

Here are a few of the things he found, much of which will sound like plain common sense to us gun owners:

- In counties that have "right-to-carry" laws or "shall issue" permits, that is, where a citizen must be issued a gun permit after meeting certain criteria, usually a background check and having taken a gun safety course, violent crime goes down dramatically while it goes up in surrounding counties that issue permits only at the discretion of the relevant law enforcement agency. Furthermore, the crime rate continues to go down year after year due to the increasing deterrence of more people getting the "shall issue" permits.
- Private citizens use guns to defend themselves against criminals more than 2,000,000 times a year. Since the safety of children is often cited by gun opponents who don't want guns in private homes, the study analyzed deaths of children per year for the sake of comparison.

For children under age 5 in the United States, less than 20 died of gunshot, about 100 drowned in bathtubs, and about 40 drowned in 5-gallon water buckets.

- Resistance with a gun, rather than passive resistance, is the safest option for the private citizen when confronted by a criminal. For a woman, especially, it is the best option, increasing her chances of not being injured by two and a half times.
- The biggest drops in violent crime occurred in urban areas, especially in poor neighborhoods, and among women and the elderly, who are most vulnerable.

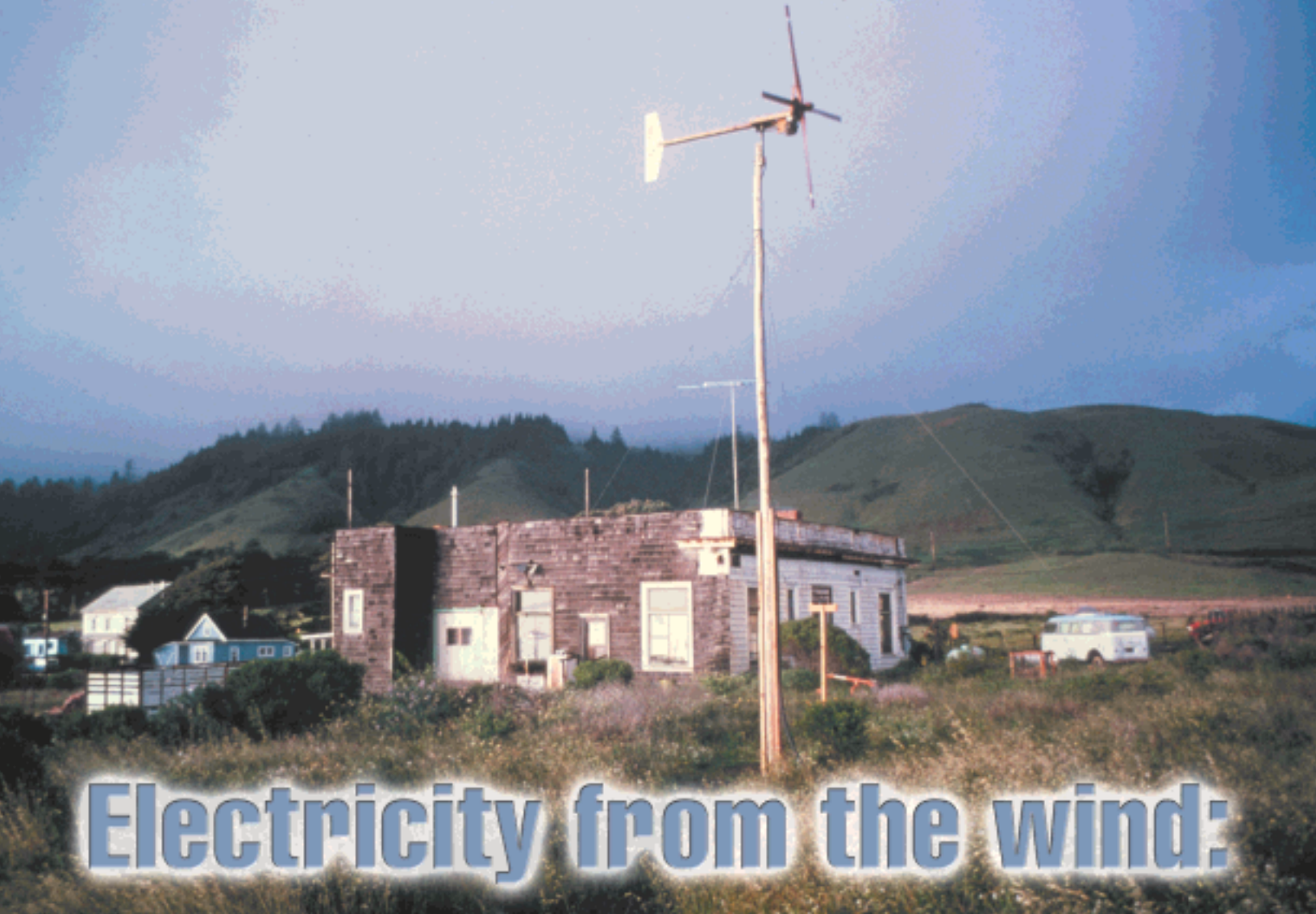
When his study was released, Lott was instantly attacked by the likes of New York Senator Charles Schumer and other anti-gun advocates as being a stooge of the gun industry, which he is not. The mass media briefly mentioned his book, then ignored it much like they have ignored the 2,000,000 annual instances in which guns are used to prevent crime while heavily reporting the under 20 instances of young children being killed by guns.

What are we to conclude from this study, especially in the wake of the mass shootings at some of the nation's schools, such as at Columbine High School? If it is clear that guns save lives far more often than they take them, what happened at Columbine? May I be so crass and insensitive to suggest that some of the teachers should have been armed? In a country like Israel where they fear attacks by madmen and terrorists, the teachers carry guns into the classroom and they consequently have no gun attacks on their students. Here in the United States, we have a federal law that bans guns from within 1000 feet of schools, even sometimes posting signs outside the school announcing to the world and to the nuts it is a "gun free zone." Do you think there may be an analogy here, that perhaps Israel's policy works and ours doesn't?

In the counties mentioned in Lott's study, where "shall issue" laws are in effect violent crime goes down, while it goes up in the surrounding counties where there are no "shall issue" laws. Do you think there may be a connection there too? Do you suppose that violent criminals and nuts may be figuring out where the easy prey are?

We who realize the value of guns have been very silent in the face of the all-out war on gun ownership that is currently being waged by certain politicians and the mass media. Yet the evidence clearly shows that gun possession and "shall issue" laws save lives. Isn't it time we stopped apologizing for our guns and spoke up?

Anti-gun groups, politicians, and the mass media regularly hide incidents and studies that portray guns favorably, and they spare no ink to tell the rare story when guns are used by criminals or by accident. Then they pass stupid laws that endanger our children. We who know the truth about guns need to let that truth be known: Guns save lives and prevent criminal attacks. They protect our families from harm, not expose them to danger. — *Dave Duffy*



Assessing wind energy potential

By Michael Hackleman

Is there wind where you live? The wind's energy can spin a generator to make electricity or drive a shaft to pump water. The questions are: Is there enough wind energy available? What's involved in setting up the system? How big a windplant do you need? How tall a tower will it need?

My first foray into using independent energy sources began in 1972 and focused on wind. In the intervening years, I've evaluated the wind energy potential of hundreds of sites. In any field of work there are tricks to the trade that come with time and experience. In this article I will try to distill

my experiences down into tricks anyone can use to assess the viability of adding wind energy to one's own personal energy equation.

Understand the wind

Tapping the energy in wind is a hit-and-miss proposition without first understanding the nature of wind. Windplant installers or owners will make critical errors in selection, siting, and use without this knowledge.

Wind is born from the unequal heating of the earth's surface and oceans by solar energy. Wind is, simply enough, a moving mass of air. What air lacks in density it more than makes up for in speed. Put a windtur-

bine in its flow and the wind will spin it. In effect, the wind machine is "gathering" some of the wind's energy. It must not take it all. Observations and calculations predict that only 60% of the wind's energy can be extracted without adversely affecting performance. So, enough energy must be left in the wind to allow it to move on.

To the casual observer, there may seem to be little pattern to the wind. However, in years of data measurement and recording at airports and climatological stations, distinct patterns have emerged in both wind direction and velocities. Annual, monthly, and even weekly patterns exist.



Figure 1.

One of the most interesting patterns shows that in most areas the windiest months are in the midst of winter and the calmest months are in summer. This one feature makes wind energy practical even for an independent system designed around solar energy. A windplant produces the bulk of its power in those months when the solar influx is minimum, or weakest. Indeed, wind and solar energy

complement each other nicely in a year's time.

Another pattern that emerges indicates that there are two distinct types of wind. The first type is called "prevailing winds," since they blow most of the time and "prevail" over the second type, referred to as "energy winds." Energy winds often piggyback the prevailing winds. In an average week, we will get five days of prevail-

ing winds (rarely exceeding 10 mph) and one day of energy winds.

To the novice it might seem that the windplant should be designed to extract power from low windspeeds because they occur more often. Alas, this is not entirely true. It is a fact that energy winds, though they may blow only 15% of the time, contain 75% of the energy that can be extracted in a week's time.

Visit your climatological station

It is the long-term data gathered on wind speeds that first revealed the patterns in wind. This data was originally gathered at airports. The general need for monitoring and recording weather data led to the creation of climatological stations throughout the USA and other areas of the world. Wind data has been gathered at many of these sites for 50 to 75 years.

There are two factors related to wind measurement: wind speed and wind direction. Hourly measurements of each are the norm. This data is condensed into a useful form in the wind rosetta. The wind rosetta is a graphic display that averages the recorded wind speeds and plots them about a 360 degree circle divided into 16 equidistant quadrants. At a glance, the rosetta gives you a good idea of the strength, duration, and direction of wind. The one I obtained in 1977 for my land in the Sierras included the average values for rosettas dating back almost 50 years. Along with a compass, the rosetta is indispensable when looking for potential tower sites.

Rosettas and accompanying data tables are available to the general public, at little or no charge, from the state government. These may even be available at a nearby climatological station but it's unlikely. Many data-logging sites are now automated and unstaffed. You'll want a current rosetta, and ones for a number of years back (to see the variances) and an averaged rosetta for as long a period as possible. If unavailable, get the data tables, and do

a little study. In any case, locate and visit the site of the climatological station in your area.

In his workshops, Mick Sagrillo, founder of *Lake Michigan Wind and Sun*, shows station sites that have been neglected or poorly sited. What do you look for? How high is the wind speed and direction indicator? Have trees grown up or buildings been added in the area that will interfere with readings in one or more directions? If the current rosetta shows an overall drop in average wind speeds, particularly in some directions, it may be explained by these influences. By whatever means, assure yourself that the data you gather is untarnished.

Of course, the rosetta's information reveals wind patterns in the general area, not on your land. At best, a certain amount of extrapolation will be necessary. Worse, it won't tell you enough. At very worst, there may not even be a station close by, either. This is okay.

Successful wind sites have been found without the use of rosettas. Onsite observations or those of local landowners are equally valuable. If you want your own onsite data, you can rent, lease, or purchase wind monitoring equipment. Install it at a likely site for a few winter months or longer. This can be a bit pricey, but so is the investment in a windplant and tower.

If you can't afford monitoring equipment, purchase a handheld wind-measuring device and log the wind potential onsite. Humans are actually fairly good as instruments. Log your readings on a calendar, noting the wind speed, direction, and duration (hours) of wind.

Wind speeds at ground level will read lower than wind speeds recorded at 20, 40, 60, and 80 feet above the same point at the same moment. Even a flat, smooth field will slow and tumble the wind. A formula exists to help predict wind speeds at heights above ground level, converting your ground-based readings into real information to assist in good decision-making.



Figure 2.

Dissect the wind equation

How much energy we get from the wind is related to the size of the machine, its efficiency, the wind's speed, and the air's density. The precise way these factors work together to produce real power is expressed (in a ready-to-use format) in the following adjusted formula.

$$P = .0015AV^3$$

where

P = power in watts
.0015 = (air density)x(50%
windmachine efficiency)/2

A = Area swept by turbine
in square feet

V = Velocity of the wind in mp

Some folks like to crunch numbers with formulas, but I'm not one of them. Still, anyone who wants to use wind energy will find some useful information here. For example, what minimal change in any one factor will result in the greatest increase in the value of power? Windplant area or wind speed velocity?

The answer is implied in the formula. Note that any increase in the value of A (turbine area) will produce an increase in P (power) in direct propor-

tion. However, a change in V (wind-speed) will result in an increase in P (power) equal to the cube of that value of windspeed. Velocity cubed (V^3) means that we multiply V times V times V.

Understand the cube law

The influence of windspeed in the wind power equation is quite remarkable: whatever power is available at any given windspeed, at twice that windspeed there is eight times (8X) the power available. This effect is called the cube law.

You can prove this to yourself by running two examples through the formula. Since V is the only thing that changes, may I suggest a shortcut. Let's pick a value, V, for the initial windspeed. Cube it, and the result is V^3 . Now, let's double this windspeed, which can be represented by 2V. Cube it, and the result is $(2)^3(V)^3$, or $8V^3$. The difference in power between the initial value V^3 and the second value $8V^3$ is the factor eight (8). So, double the windspeed, and there's eight times the power available.

No wonder a 100 mph wind is so destructive. It has eight times the power of a 50 mph wind. Or 1,000 times the power of a 10-mph wind.

Incidentally, what's the average annual windspeed (AAW) for your area? Climatological stations compute AAW by adding together the values of their hourly readings (including zeros) and dividing this sum by the number of readings taken. What value of AAW do we want? For years, the wind energy industry has advocated a minimum of an AAW of 8 mph for a successful wind energy system. This recognizes that to achieve an average AAW of 8 mph over a period of one year means that you'd have to have higher-than-8 mph windspeeds of significant value and duration to balance out all those zeros (dead calms).

Still unresolved, however, is the actual amount of energy yield from the wind in a year. Or, better yet, during the windiest months. If climatological stations averaged only the cubes of those hourly windspeeds, we'd have solid info on the power we could harvest from the wind in a given month, season, or year.

Examine windplant ratings

There are a number of established methods for extracting some of the wind's energy and putting it to good use. Windmachine, aeroturbine, windplant, and airscrew are all terms used to describe the machinery that will convert energy from the wind into mechanical motion. While these terms are used by the layperson somewhat interchangeably, they are intended to be descriptive of function. For example, wind-electric units, aero-electric units, and windplants produce electricity. Water-pumpers are used to pump water. Windmills are designed to power mills for grinding grain.

There are two classes of aeroturbine: horizontal and vertical. The terms are used to describe the axis about which the windmachine itself rotates. There are at least five types of horizontal-axis windplants and three types of the vertical-axis windplants. Of these designs, only two of the horizontal-axis types have proven com-

mercially viable. One is the multi-blade, curved impeller machine used for water-pumping (**Fig. 2**). It is designed to work at very low windspeeds and rpm. The second type of successful windplant is the propeller type used for generating electricity (**Fig. 1**). It uses between two and six airfoil-shaped blades, is highly efficient, and works in higher windspeeds and at higher rpm. The remainder of this article will focus on the propeller-type windplant.

Note: It has been said of my first two books on wind power that, while written for the do-it-yourselfer, they actually discourage someone from building their own windmachine. That's the nature of reality. There are many subtleties to building a windplant and good machines are no accident. If you insist on homebrewing a windmachine, prepare to do some major homework. Read everything you can on the types of windplant that match your application, get plans if possible, and don't downplay any shortcomings. Homebrew windplants are experimental in every sense of the word, and they are likely to involve a number of test-tune cycles. Allow for outright failure. It is a big mistake to expect reliable power production from a homebrew windplant.

All aeroturbines, irrespective of size or type, have lower and upper limits (usually expressed as particular windspeeds). Below the lower limit, called cut-in, the aeroturbine is stationary or moving too slow to be effective. Don't expect power below a windspeed of 10 mph. At the upper limit, usually referred to as the "rated" or "maximum" windspeed, the machine is developing its designed power level. Above that limit, depending on the governor type, the wind plant will decrease in output or maintain the rated power.

The cube law describes the power curve in wind. Suppose that a specific windplant produces 100 watts at 15 mph. Using the cube law, at 30 mph this aeroturbine could generate 800

watts. In a 45 mph wind, the cube law says the windplant could generate 2,700 watts. Note that the increase in power between 15 and 30 mph (700 watts) is small compared with the increase in power between 30 and 45 mph (1,900 watts).

Windplants have both a power rating and windspeed rating. The power rating is the maximum power the windplant can safely produce and is expressed as a specific wattage, i.e., 700 watts or 1500 watts, for the system voltage, i.e., 12V or 24V. The windings and brushes of the generator and/or the control system may be adversely affected by the extra current if the rating is exceeded. The windspeed rating of a windplant is defined as that windspeed at which the windplant produces its rated power. It may also reflect the highest rpm the windplant can safely experience. Whatever type of governing system is used, it should not permit either an increase in windplant rpm or generated wattage with further increases in windspeed.

There are no standards for windplant ratings in the wind industry today. At the least, this makes it difficult to compare windplants from different manufacturers, or ones of different ratings from any one manufacturer. At worst, the consumer must validate manufacturer claims and interpret ratings. Does the specified power rating represent continuous or peak power? At what windspeed does the windplant begin to produce power? How much power will the windplant produce at any given windspeed?

Unfortunately, the specification sheets for most windplants do not give these figures. More often, these figures must be extrapolated from a tiny graph that plots windspeed vs wattage via a curved line. If you want to know if a particular windplant is going to work for your situation or wish to simply compare various brands, you must involve yourself in a bit of calculation for each one. Here, your knowledge of the cube law will help you make informed choices.

Figure 3.

| If (H/H ₀) is | For a H ₀ of 6 ft. H is (in feet) | 5th Root of H/H ₀ —Z is |
|---------------------------|---|---------------------------------------|
| 2 | 12 | 1.15 |
| 3 | 18 | 1.20 |
| 4 | 24 | 1.32 |
| 5 | 30 | 1.38 |
| 6 | 36 | 1.43 |
| 7 | 42 | 1.48 |
| 8 | 48 | 1.52 |
| 9 | 54 | 1.55 |
| 10 | 60 | 1.59 |
| 11 | 66 | 1.62 |
| 12 | 72 | 1.65 |
| 13 | 78 | 1.67 |
| 14 | 84 | 1.70 |
| 15 | 90 | 1.72 |

An important question is: how much power at what windspeed? Many windplants currently manufactured are rated to deliver full power at 25 mph, or higher windspeeds. This rating is useful only for those areas of the world experiencing AAWs (average annual windspeeds) of 12-14 mph. A windplant that develops its full (rated) power at 18 mph would be a much more suitable machine for 90% of the U.S.

Don't shrug off the 7-mph difference between 18 mph and 25 mph. If one windplant is rated to deliver 2,000 watts at 25 mph, how much power will it produce at 18 mph? Using the cube law, my answer comes to 746 watts on the nose. This means that a second windplant rated to deliver 750 watts at 18 mph will equal the output of the 2,000-watt machine in 18 mph winds. Given the difference of cost and weight between the two machines, it is possible to achieve a higher overall cost/benefit ratio with a small windplant on a tall, lightweight tower than a big machine on a short, heavy tower.

A good way to check various brands or models of windplants is to talk to dealers and customers. A dealer who services the equipment he or she sells is likely to be candid about brands that work well and ones that are troublesome. Customers are another source of information. Find articles written

by these people on their systems. You may also be able to communicate with them directly. Be thoughtful. Compensate them for their time and include a SASE (self-addressed, stamped envelope) with any queries.

Evaluate tower height

System inefficiencies can be compensated for somewhat by increasing the amount of power available from the windplant in any given wind. Manufacturers

will tell you to increase the rating of the windplant, thus effectively increasing rotor diameter and harvesting a bigger chunk of the wind's energy. However, the best way to get more power is to increase the windspeed to the windplant by placing the windmachine higher off the ground by using a taller tower.

There are three primary reasons to put a windplant on a tower. One, to clear trees, houses, and other obstacles that will slow the wind down. Two, to position the windplant in a smooth flow of wind. The presence of uneven terrain and obstructions both slow and turbulates the wind, robbing a windplant of power. And, three, to expose the windplant to higher windspeeds.

As the cube law dictates, if we want to make leaping increases in power output of a windplant for small increases in any ONE factor, let it be windspeed. Earlier, you learned that there is an eightfold increase in power output by going from, say, 10 mph windspeed to 20 mph. It shouldn't be difficult to see that if we increase the windspeed by 2 or 3 miles per hour, say to 13 mph, we will have **doubled** the power that's available at 10 mph. In this situation, the swept area of the aeroturbine or its efficiency would have to be doubled to achieve the same effect as a (calculated) 2.6 mph increase in windspeed.

A formula exists to help estimate the windspeed (V) at various distances (H) above even terrain from a reading taken at 6 feet above ground (H₀) for any windspeed (V₀) up to 35 mph. It is expressed as: $V = V_0 (H/H_0)^{1/5}$

I found this unwieldy, since it requires that I find the fifth root of the ratio H/H₀, something a simple calculator wouldn't help me do. For this reason, I've built up a table that reduces the math to a single factor (z) for tower heights up to 96 feet (**Fig. 3**). The new formula is:

$$V = z (V_0)$$

where:

V=Velocity in miles per hour

z=the 5th root of H/H₀ (the third column in Figure 3)

V₀=Velocity of wind at height H₀

Let's work an example. Let's say you measure 8 mph of windspeed (V₀) with a windspeed indicator held the required 6 feet above the ground. Using the table, for a 24-foot tower, find z (1.32) and multiply by 8 mph. This yields 10.56 mph. Similar math yields 11.4 mph for a 36-foot tower, 12.2 mph for a 48-foot tower, 12.7 mph for a 60-foot tower, 13.2 mph for a 72-foot tower, 13.6 mph for an 84-foot tower, and 13.9 mph for a 96-foot tower. These figures indicate that whatever power the windplant might produce on a 36-foot tower would be almost doubled if it were situated on a 96-foot tower at the same spot. Even if you plug in different windspeeds, the formula holds the same proportions. Therefore, independent of the windplant rating or the actual windspeed, you get double the power on a 96-foot tower as you do on a 36-foot tower. Compare the cost of an additional 60 feet of tower and rigging with the cost of a windplant of twice the power rating. Let's hear it for the cube law.

All of this helps explain why it is so important to distribute the investment you make in a wind-energy system between the windplant and the tower.

A large windplant requires a strong tower to support its weight. A small windplant may use a correspondingly lighter tower. It's true that free-standing towers must be strong enough to withstand the side-loading effect of high windspeeds. However, guyed towers are able to transfer side-loading to the guy wires themselves, minimizing the structural requirements for the tower to primarily compressive ones (windplant weight). Translated, this means that a tall, lightweight, guyed tower topped with a small windplant may give you more "bang for your buck" than a big windplant on a heavy tower that your budget must curb in overall height.

Match windplant to system

Can your system's batteries absorb a big windfall of energy? Some attention should be given to matching the windplant's output to the system to which it is connected.

Where wind is the primary or singular energy source in a system, the battery capacity should be large enough to absorb the power generated from energy winds. These winds are both infrequent and irregular, meaning the system's batteries may be quite depleted before they are refilled. In this case, extra care must be afforded the battery pack to protect it from cold when its state-of-charge (SoC) is low.

A different strategy is required when wind is a supplemental energy source, say, to PV (photovoltaic) and/or small-scale hydroelectric energy, or where a standby generator exists to replenish the battery pack as needed. In these scenarios, a small windplant positioned to generate energy from intermediate winds makes more sense than a large windplant that takes big energy from big wind. This is because the system itself is not able to absorb the huge inrush of power. Its batteries are never that depleted.


This is not to say that there is no place for a big windplant in a system. If load diversion is effectively utilized,

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large amounts of generated electricity can be diverted to direct use in space heating or water heating applications. This procedure might relieve other energy sources, like wood or propane, in performing these same functions. This strategy works best wherever there is a lot of strong wind and a lack of viable alternatives for generating electricity other than from wind.

We'd all like as much power as possible from any energy source we tap. One of the most expensive components in a system based on wind-generated electricity is the windplant itself. As this article illustrates, bigger is not necessarily better, nor will it necessarily result in greater overall power production. Don't let the tower be an afterthought. Strive for a balance in windplant size, tower height, and energy storage considerations. I hope that I've given you some ideas on ways to achieve the best cost/benefit ratio possible.

(Drawings and slides for this article were taken, in part, from Wind and Windspinners, The Homebuilt Wind Generated Electricity Handbook, and At Home with Alternative Energy, all by Michael Hackleman. For a current publications list, send an SASE to him at P.O. Box 327, Willits, CA 95490. E-mail: mhackleman@saber.net.)Δ

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Propagate your plants with division, layering, stem & root cutting, & grafting

By Marcella Shaffer

Nearly all gardeners are familiar with saving seeds and the benefits and reasons for doing so, but there are numerous reasons and benefits in learning other techniques for plant propagation. These techniques involve division, layering, stem cutting, and grafting. For the budget sensitive gardener, these methods allow them to reproduce new plants from friends' plants or from their own plants and perhaps trading or selling the excess. New plants can also be gleaned from wild growing species without harming them, then transplanted into the home garden. In some species, like trees, these techniques may be easier and faster than growing from seed. Another important reason for these types of propagation is that some plants cannot be grown from seed because the offspring will not be exactly like the parent plant. 'Bartlett' pears and 'Golden Delicious' apples are two examples of this.

Division

Most perennial ornamentals, herbs, and vegetables that do not have a sin-

gle stem or crown are propagated by division of the roots. Rhubarb, hostas, and mints are examples. Division is the most commonly practiced asexual propagation method and is exactly as it sounds, that is, you simply divide the parent plant into smaller new plants. The size of the parent plant will determine how many times it can be divided. If you do not want to reduce the size of the parent plant, usually a few divisions can be obtained from around the edges without affecting its overall size or performance. Often, dividing an older plant will rejuvenate it, resulting in lush growth and performance the following season while keeping it in bounds.

The plant you select to divide should be healthy and dormant. Early spring is a good time to divide; however, late fall will work as well. Plants that are loosely interwoven can sometimes be pulled apart with your hands or a trowel. Others that are tightly interwoven will require lifting the parent plant from the soil and cutting apart with a spade. Look for a natural dividing line when separating clumps. Try to keep as many of the roots intact as possible and make sure there is at least one "eye" or crown in each division. Trim

off any damaged roots and plant the division at the same depth at which it was growing. Keep new divisions well watered.

Layering

Layering is another simple method of propagation. In nature it occurs naturally when a stem, still attached to the plant, touches the soil and begins to root. This stem will become a new plant. Some plants, like raspberries and trailing blackberries, layer themselves naturally. You can intentionally layer a plant by digging a small hole near the base of the mother plant then bending down one of the lower branches and forcing it into a "U" shape. Place the bottom of the "U" in the hole and fill the hole with soil.

It may be necessary to pin the stem in the hole with a forked branch or piece of wire bent into a "U" shape. Removing about 1/2-inch of bark from the part to be buried and treating it with a rooting compound will encourage root formation. Generally plan to leave the new plant undisturbed for a year to give it time to establish an ample root system. Keep well watered. Once the new plant is rooted it can be cut from the parent plant and transplanted elsewhere.

Serpentine layering can be done with plants that have flexible stems. Bend the branch to the ground, as for simple layering, but alternatively bury and expose stem sections. The exposed portions should have buds for best results (*Illustration 1*).

Stem cuttings

Most woody and herbaceous plants can be propagated by cuttings. Cuttings involve removing a stem or branch from the mother plant and rooting it to form a new plant. Stem

Illustration 1: Layering

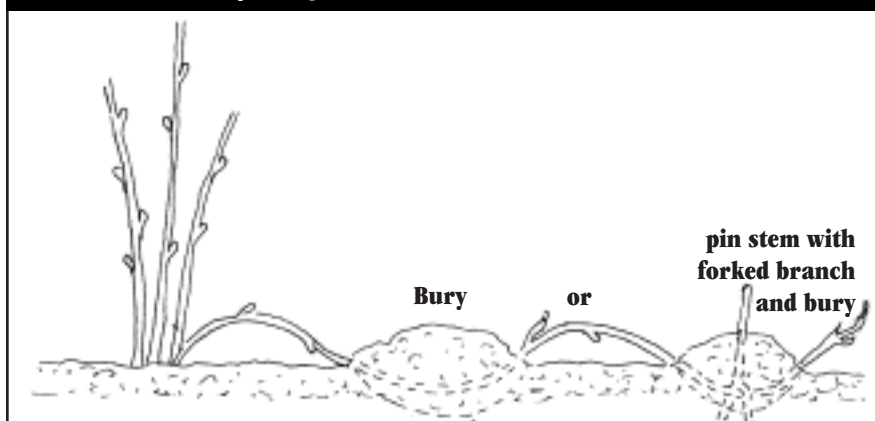
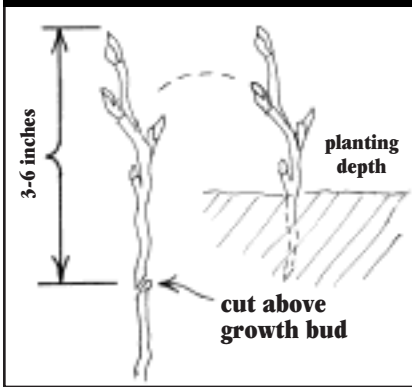


Illustration 2: Stem cuttings



cuttings should be taken from the growing tips of branches and be between three and six inches in length. Remove cuttings early in the morning or late in the evening from healthy, disease-free mother plants that are actively growing.

Use a sharp knife that has been dipped in rubbing alcohol. Make a clean, slanted cut just above a side shoot, leaf node, or growth bud. After taking the cutting, wait no more than a few minutes before you place them in the rooting medium. Bring indoors and re-cut them for the cleanest possible cut, avoiding crushed stems and hanging strands. Remove leaves, flowers, etc., from the lower half of the stem, then dip the cut into rooting compound. Poke a hole in the rooting medium and insert the cutting at a depth that is one-half to one-third its

length. Firm medium around the cutting. Coarse sand mixed with equal amounts of peat moss makes a good rooting medium and the flat for the medium should be 3-4 inches deep with drainage holes.

Once all the cuttings have been inserted in the medium, water them with luke-warm water, then cover with plastic to form a tent or mini-greenhouse. Use care not to let the plastic touch the cuttings. Place in a warm spot with good light but not direct sun and keep the medium moist but not wet. After seven to ten days, move to an area that receives partial sunshine.

If your cuttings do not root, simply try another batch. Sometimes a few days difference in the maturity of the cuttings will make a difference. It can take from one week to one month for roots to develop. When the roots are approximately 1/2-inch long, transplant the cutting to a pot filled with good quality potting soil, and fertilize. After the cutting is established and actively growing it can be transplanted to the garden (**Illustration 2**).

Root cuttings

Plants like horseradish and some of the ornamental perennials are propagated from root cuttings. Root cuttings are best taken early or late in the growing season. Although slower than stem cuttings to root and begin grow-

ing, they require less care and attention. Dig the mother plant from the ground, then cut a two to four-inch section from one of the mother plant's roots. Select a root that is firm and healthy with smaller feeder roots. Place the cutting in a good quality growing medium in the same position it was growing (Some plants have horizontal roots while others have vertical growing roots). For vertical growing roots, plant the root cutting so that the top 1/4-inch of it is exposed above the growing medium. For horizontal ones, simply place on the medium surface and cover with one inch of soil. Water and firm the medium on and around the cutting.

Keep the cutting moist and in a mostly shaded location until new growth appears. When growth is evident, transplant to another pot and fertilize. Gradually harden off before moving to the garden (**Illustration 3**).

Grafting

Grafting is a method used to join parts of different plants so they will grow as one plant. Many ornamental trees, fruit trees, and roses available from nurseries have been grafted. This process is used to control the size of the mature plant (dwarf varieties), provide a hardier rootstock, propagate plants that do not root well, and sometimes just for the novelty of growing several different cultivars on one plant. The part which is to be grafted to the recipient stem or root is called the scion. For successful grafting the scion and stem or root should be compatible and the union of the two must touch and be kept moist.

Grafting can be an entertaining hobby that requires only grafting wax, grafting tape or common twine, and a sharp knife. You can start with your own apple tree and, by grafting limbs from friends' apple trees, grow several varieties on one. Grafting wax and tape are available from garden supply centers and by mail order.

Illustration 3: Root cuttings

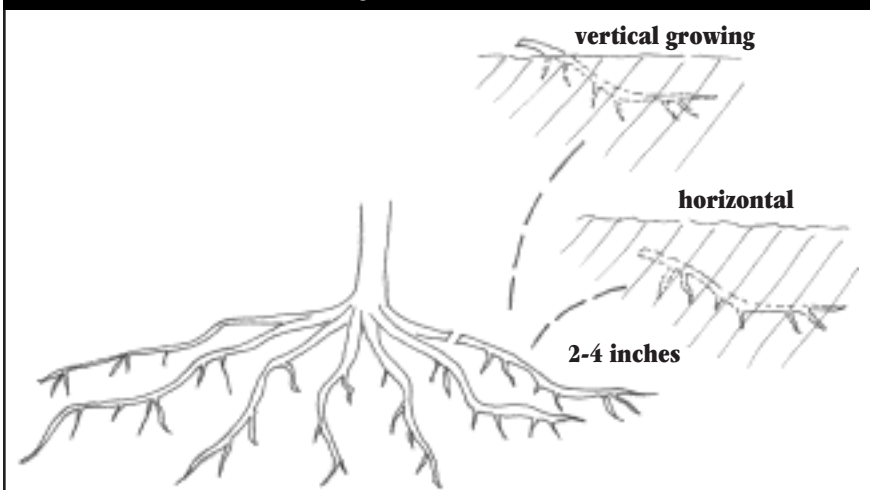
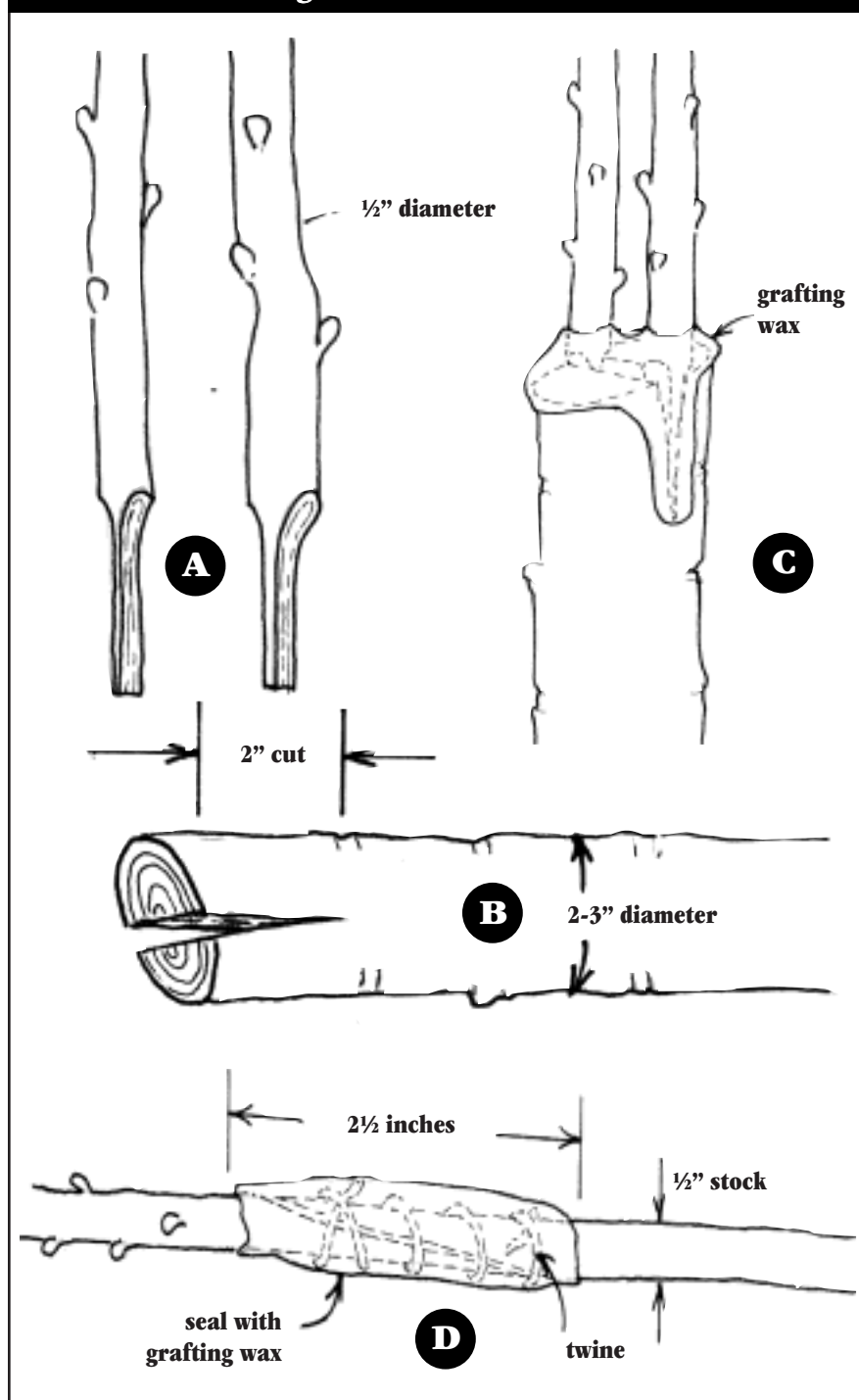


Illustration 4: Grafting



Cleft grafting

There are several different techniques used in propagation grafting. Cleft grafting is usually done to add a new cultivar to an existing one. It is done in the early spring just before plants break their dormancy. Select a

scion from one-year old shoots that is healthy with evidence of buds and approximately 1/2-inch in diameter. Using a sharp knife that has been dipped in alcohol, cut so that it has a double bevel in a wedge shape two inches long (Illustration 4-A).

The recipient branch should also be healthy and strong with signs of pending growth. It should be two to three inches in diameter. Cut the branch perpendicularly, then make another cut vertically, two inches deep, through the previous cut (Illustration 4-B). Fashion a wedge from another branch or piece of wood and use it to hold the cut open. Use care not to tear the bark or cause any more damage than necessary. Place the scions, right side up, in the cut at the outer edge as shown and remove wedge (Illustration 4-C). Cover the union with grafting wax.

Whip grafting

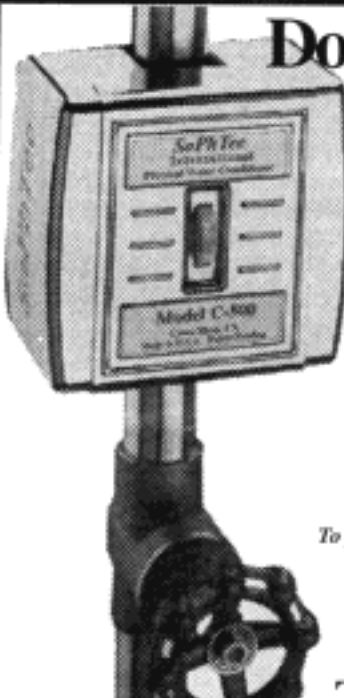
This technique is used when the scion and recipient branch are of the same diameter (approximately 1/2 inch). It is also done in the spring, and it generally heals quicker and is stronger than cleft grafting. Select the specimens, as above, and make a sloping cut 2 1/2 inches long on the recipient branch as shown. Make a matching cut on the scion and place together so they interlock. Tie firmly with twine or use grafting tape to hold in place and cover with grafting wax (Illustration 4-D).

Care of grafts

For the following year, grafts will require some attention. If you used twine or tape on the graft, remove it after growth starts so that it does not harm the site. Some grafting tape, however, is designed to be left on the branch since it will stretch with growth and deteriorate in time. Check the instructions for the particular variety of tape you used. Inspect the grafting wax every two to three weeks for the first year. If the wax has cracked, re-apply it. Keep the plant well watered. Δ

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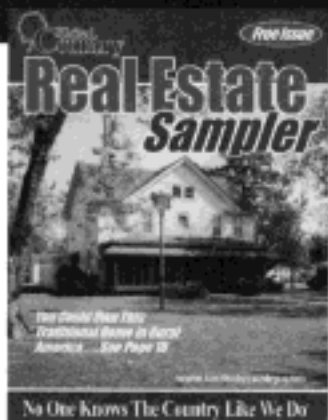


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Ayoob on Firearms:

Cheap guns are good enough

More than 10 years ago, my friend Mark Seiden called me in on a murder case in Miami that Janet Reno, then State's Attorney for the county in question, had ordered prosecuted. A woman named Mary Hopkin had killed her common law husband, a man named James Yarolem.

James was in his forties. Mary was 63. Her life had been hard, and when she found a younger man who convinced her he loved her, she took him into her home. This did not turn out to be a wise decision.

Mary worked. Jim didn't. He drank and smoked up all the money she brought in. He abused her, with the classic escalation. First, verbal derisiveness. Then the shove with the palm. Then the slap of the open hand. Then the blow of the closed fist. The time came when she confronted him and said, "Jim, you drink all my beer, and you smoke all my cigarettes, and you won't get a job, and ... I think it's time you left." Even then, being in the classic denial pattern of a battered significant other, she couldn't bring herself to say, "Oh, and by the way, you beat the crap out of me whenever you feel like it."

She didn't need to say it. Jim didn't handle her declaration well. He began to beat her up with more vigor than before. She went to call the police, and Jim ripped the telephone out of the wall, wrapped the phone cord around her neck, and strangled her unconscious. He left her for dead and went off to the nearest bar. When Mary awoke, she crawled—she couldn't walk on her arthritic and aging legs, she crawled—to the near-

est trailer to hers and when she got there blurted, "Call the police."

The cops arrived. When Jim came back Metro-Dade officers were there. They arrested him. When they dragged him away, the cops testified later, he was screaming "Mary, you f--in' bitch, I'll kill you for this!"

Very soon thereafter, he was out on bail and he came to make good his threat. By now, Mary was in terror of him, and had borrowed from her son the cheapest revolver available, an RG .22. The RG is the gun that Handgun Control Inc. is trying to talk about when they rail on about "Saturday



Author with inexpensive Ruger P97 .45 pistol and Mini-14 .223 rifle. Target is from 50-shot police rifle qualification course, fired at ranges from 7 to 75 yards, including 6 in head with rifle, and five "rifle transition to pistol" rounds, which account for the larger caliber holes in center of target.



Massad Ayoob

Night Specials." If you left it on a hot stove it might melt.

Jim pounded on the door like the big bad wolf. "Mary, let me in!" "Jim," she answered, "I know what you're going to do! I have a gun! I won't let you kill me! Go away! Don't make me shoot you!"

He didn't listen. He smashed the door off its hinges and came at her, and she fired three shots. All three .22 bullets hit him. He turned and ran, got about 20 feet, and collapsed and died. To make a long story short, she was charged with murder.

She had no money. Mark Seiden, her attorney, took her case anyway. Mark was a former homicide cop for Metro-Dade before he became a lawyer. I did what he did, after he called me. I took the case pro bono, at no charge. After I spent an hour with Mark on direct examination explaining to the jury why she had no choice but to shoot, I took out the prosecutor in a little less than a minute of cross examination. The jury was quick, too: they took about two hours to acquit her of all charges.

I remember this, and I flash forward to yesterday, at one of the regularly scheduled qualifications for my police department. I shot a gun the agency has already approved as optional and is thinking of adopting for standard

issue, the Ruger P97 that I've written about in this column before. This .45 automatic recently put 60 bullets into less than 3.5 inches during a timed FBI-style shooting qualification. I am authorized to carry whatever pistol I want, including my custom \$3500 "LFI Special" Colt .45 automatic. Instead, right now, I carry this \$460 Ruger. The qualification also encompassed the .223 rifle. I didn't shoot that with the \$2,000 custom CAR-15 from Olympic Arms that I'm authorized to carry; I shot it with our department issue Ruger Mini-14 .223 that would cost you only a few hundred bucks. Price one at Wal-Mart or K-Mart and you'll see, though I'd rather you spent a couple bucks more and bought it from a gun dealer who supports your Second Amendment rights, which is why I buy my guns at gunshops instead of Monster Marts. But, I digress.

The pistol course required 60 shots. All 60 went center and I scored 100%. The rifle course was 50 shots, actually 45 with the rifle including half a dozen head-shots, and another five rounds with the pistol in "rifle-to-handgun-transition." These "cheap guns" gave me a 99.6% score that wouldn't have been different with my more expensive guns, because it was me who jerked the trigger and blew the shot that cost me one point.

My department regulations allow me to carry a custom made rifle that costs several thousands of dollars with me in the patrol car. I used to do that. Frankly, I don't bother anymore. Each of our cruisers contains the Mini-14 for any of our officers to access, and to be blunt, it does the same job just about as well.

The last time I carried my \$3500 custom pistol in uniform was a couple of years ago. I and some other officers were working security for a double police funeral where it was feared that the cop-killer—who himself was slain by police on the day of the murders—might have friends who would want to avenge him by harming

any of the several thousand police officers in attendance for the funeral. We who covered the perimeter were ordered that we couldn't have rifles evident, for fear of people being frightened and made paranoid. I carried that expensive .45 pistol that day because I knew that with 185-grain +P hollowpoints, it would hit what I aimed at from 100 yards if something went down in the wide-open venues that ranged from a downtown cortege to the burial at the equally wide-open cemetery.

Nothing happened. The cop-killer, it turned out, had been a lone wolf. After it was over, I went to the firing range and tested my department issue Ruger P90 .45 automatic. It shot eight rounds for eight into a man-size target at 100 yards. It would have done the job all along.

So, what's the lesson? It's simple, really, and it touches deeply upon the values that make you read publications like Backwoods Home Magazine.

Simple can be as good as fancy, and is sometimes better. Inexpensive can be as good as expensive, and sometimes is better. "Reliability" is more important than "esoteric" in the final balance. Something cheap, now when you need it, beats hell out of something costly that you have to save up for, to buy later, when it may be too late. "Something is generally better than nothing."

Mary Hopkin couldn't have afforded an expensive gun. If she had needed \$800 to buy a state of the art defensive pistol, she wouldn't have had it, and she would have died. She would have been another statistic.

If you are familiar with the dynamics of protecting the innocent from violent evil, you already know that, insofar as the context in which it was presented here. And, even if you don't like guns at all, you can understand how this is an allegory to the whole lifestyle, the whole set of values, that are celebrated in Backwoods Home Magazine. Δ

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Green or yellow: Grow your best bush beans ever

By Lisa LaFreniere

Bush Beans, or snap beans as they're sometimes referred to, are a growing favorite among many gardeners, and with good reason. Beans are high in vitamins A, C and B2, they're easy to grow and, unlike other vegetable varieties, growing beans will actually improve the fertility of your soil. Bush beans are also easier to grow than pole beans, require no training or staking, and you won't need a ladder at harvest time. If you're a true bean lover and haven't grown bush beans before, give them a try. I guarantee you won't be disappointed.

Soil preparation

While bush beans will grow under most any soil conditions, a little extra effort will go a long way in improving yields and lessening the chance of disease.

Beans prefer a rich, well-drained soil with a pH of around 6.0 to 6.8, so add plenty of organic matter before planting. Heavy amounts of fertilizers are not necessary for proper bean growth; however, adding small amounts of nitrogen prior to planting is beneficial. Till the area and your seed bed will be ready for planting.

Planning and planting

Before rushing off to the store to buy the first pack of bean seed that catches your eye, take the time to do a little bit of planning. Think about the way you will use the produce. Will you be canning the harvest? Freezing? Want only enough for fresh eating?

Many varieties are grown with a specific purpose in mind. As a general rule avoid those varieties whose descriptions include the words "all-purpose" or "general use" and instead focus on varieties grown for the purpose you have in mind. You will get superior flavor from beans intended for fresh eating, and you won't have to worry about the vegetable not holding up to your chosen method of preservation if the variety has been specifically chosen for that purpose.

If you're in a hurry for that first pot of beans, resist the temptation to start a few plants indoors. Beans do not hold up well to transplanting and the amount of individual plants you would need to start would be difficult for the average gardener to handle. Instead, choose varieties with the shortest maturity dates. I like to plant a short row of Earliserve (45 days) or Contender (40 days).

To get a continuous supply of beans throughout the season, plant varieties of differing maturity dates or make smaller plantings every two to three weeks until about mid-season. The latter method is a must when planting the

fancier French or filet beans, as they must be picked frequently and have a very short harvest period. Those who plan on preserving much of the harvest could choose either method depending on whether they wanted to preserve most of the crop at one time or prepare smaller batches throughout the season.

Plant beans after all danger of frost has passed and daytime temperatures have reached into the upper 60s. Short spells of cooler temperatures won't hurt the bean plants but will slow their growth, and a long stretch of cold could stunt their growth, so be patient. Also, don't soak bean seed to speed germination; this could damage their structure and leave them open to disease.

Once the soil and air temperatures have warmed, your beans will thrive and their performance will usually be superior to that of those who tried to rush the season.

Plant seeds 1 inch deep and about 2 to 3 inches apart in rows wide enough to cultivate easily, usually 24 to 36 inches. Thinning is not necessary, but if you feel you must thin

GROWING TENDER DELICACIES

Those fancy beans fetching high prices in markets and restaurants can easily be grown at home. Filets, or "haricots verts" are grown in the same manner as other beans with the biggest difference being how they're harvested.

These beans must be harvested on almost a daily basis as they become tough and stringy if left on the plant for even a short time. Picked when about 4 to 6 inches and less than 1/4-inch in diameter, these beans will provide you with some of the best fresh-eating beans you've ever had. They will not, however, hold up to processing, so enjoy them while they're here. Some of the best tasting include: Tavera and Delinel Filet.

leave plants close enough for leaves to touch as this will give you improved production.

Care of the crop

One of the great things about beans is that they really don't need much care or fuss at all. Just keep the soil fairly moist and the weeds out. Because beans' root systems are very shallow, take care not to cultivate too deeply. Better yet, apply a heavy mulch of grass clippings when the beans are about 6 inches tall and avoid weeding altogether. Never work with or around bean plants when they are wet; this will cause rust to develop on the pods and can spread disease. So wait until plants are completely dry before handling.

Beans can be affected by a wide variety of diseases. Luckily, most varieties grown today are resistant to most of the more common ones. If you've had problems before or know

of a particular problem in your area, choose varieties proven to resist them. Good gardening practices, such as those mentioned in this article, will also help to keep down problems associated with the spread of disease.

The biggest pest associated with bean plants is the Mexican bean beetle. These pests usually show up later in the season but are occasionally found early in the spring. Pick off any beetles you spot and destroy them. If eggs are attached to the underside of leaves they must also be removed. If heavy infestations occur consider treating the crop with an application of rotenone dust or a non-toxic insecticidal soap.

Finally, pick, pick, pick. Picking frequently encourages further production and will provide you with beans that are both tender and flavorful, which is, after all, the whole point of growing your own beans. Happy eating. Δ

SEED SOURCES

The following companies offer a good selection of bean seed, including varieties mentioned in this article. If you are having trouble locating suitable seed, request copies of their catalogs.

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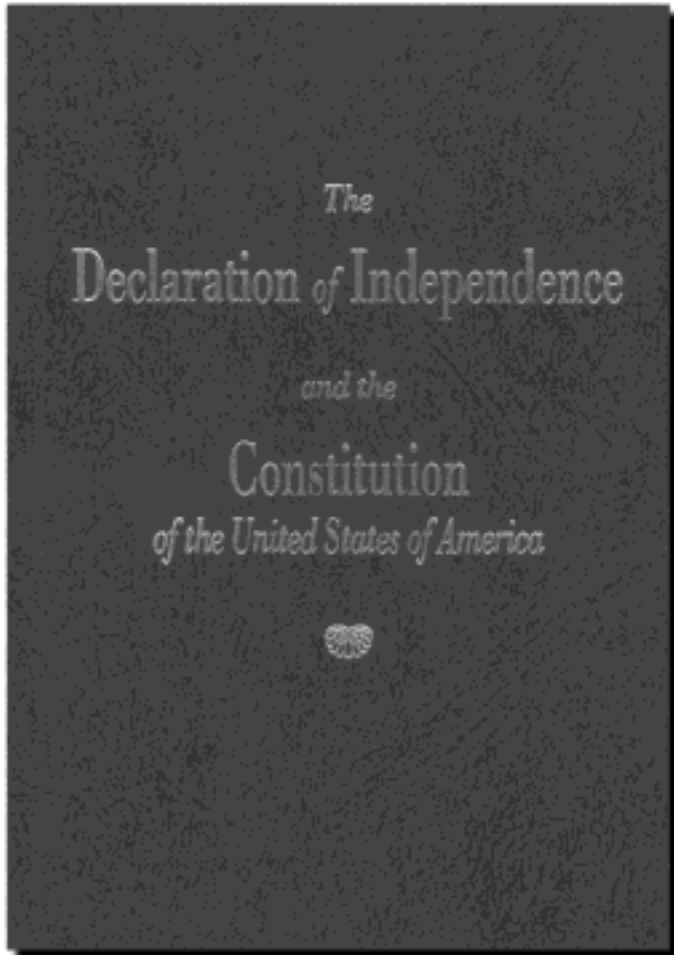


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Rural Building:

Construction q's and a's

(In this column, Vermont rural architect Martin Harris invites readers to submit questions about residential and light commercial building design and construction. Send questions to *BHM*, P.O. Box 712, Gold Beach, OR 97444; e-mail: martin@backwoodshome.com. Access Martin's "Construction Dispute Service" directly at www.together.net/~mharris.)

Q. We have just purchased 15 acres, and our question is how to install our septic system, how far away from the on-site stream and can we use cinder blocks?

A. The short, common-sense answer is that, with any sort of normal soils, a properly-functioning system with cinder (actually, these days, they're concrete) blocks or even zero-cost fieldstone could be installed as close to the stream as, say 100 feet.

The longer answer is that common sense may not be enough. That's because most states have very detailed requirements for septic system installation, ranging all the way from professional-engineers-only design to minimum septic tank size and offsets from streams and property lines, including everything from fairly elaborate soil tests to bureaucratic on-site installation inspection.

It happens that Vermont law still includes our so-called "10-acre exemption," which allows any landowner with at least that lot size to design and install any arrangement he/she wants, as long as no effluent can be observed crossing the property line. This exemption has been under severe pressure by anti-rural-development advocates in recent years and won't survive much longer, but while it does it allows a rural homesteader substantial design freedom at minimal installation cost. There may be

similar acreage-based exemptions in other states.

Most states now have regulations prohibiting the use of site-built septic tanks using concrete blocks. They require instead factory-manufactured pre-cast concrete units, with minimum size ranging from 500 to 1000 gallons in which primary (anaerobic) bacterial treatment occurs. The effluent then flows by gravity to the typical perforated-plastic-pipe field, where runs of pipe are set into gravel trenches for secondary (aerobic) bacterial treatment to take place. From the holes in the pipe, the treated effluent then flows harmlessly through the gravel into the ground. Could you build a tank out of block, laid up in waterproof manner with mortar joints and surface parging, setting it on a fairly solid concrete slab so it won't settle and allow cracks to open up? Sure, if the authorities will let you.

The authorities might even let you build a tank out of dry-laid block, no mortar, with the core holes set horizontally, allowing the effluent to seep immediately into the ground. Such construction used to be made out of fieldstone and was called a cesspool; the design basis was that both anaerobic and aerobic digestion could take place in the same container, and the final effluent would be just as clean as in the more modern two-step system. If you go this route, you'll most likely want to emulate the old-timers and build two or three cesspools, directing the sewage flow into one for a few years, while the others are allowed to "rest" and the sludge build-up in the surrounding soil to biodegrade.

Whether it's to be cesspool or septic tank, the top should be a couple of feet below grade in northern climates so



Martin Harris

that bacterial action isn't slowed by low soil temperatures. There should also be a removable lid so that the indigestible sludge which builds up at the bottom of the tank and the organic mat at the top don't fill up too much of the tank volume. Pumping every five years is usually recommended. If your design calls for the septic tank flow to go to a tile field, remember that the field pipes should be less than a foot from ground surface, so that the aerobic bacteria can get oxygen. You'll need either a sloping site or an electric pump to meet this design essential.

If you don't fancy digging every five years to get to the tank lid, install an access route which is exposed at the soil surface. My own tank set up is properly buried, but over the lid opening there's a three-foot length of three-foot diameter concrete pipe, with the lid on top of that. To pump the tank we just step through the surrounding flowerbed, lift the lid, and drop the pump hose down the hole into the tank. Slick. Δ

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Make extra money teaching your skills to others

By Robert L. Williams

People living the backwoods lifestyle have several common qualities: they love to be free and unencumbered, they like to develop new skills and abilities, and they seem to constantly be looking for ways to make extra money without taking a regular second job.

For making that extra money, teaching may be one of the best deals around. This is not full-time high school, middle school, or college campus types of teaching I'm talking about. Those positions are fairly restrictive and generally you must have a bachelor's degree and a teaching certificate—at the very least. Many schools even want you to have a Master's Degree or a Ph. D.

The kind of teaching I'm talking about, though it's through the local

colleges, is not in the academic or college transfer division where you will need a postgraduate degree. It's teaching in the developmental skills department (or division) and there are wonderful opportunities awaiting there for people who know something and want to teach it to others.

From state to state the requirements, pay scales, opportunities, and even the labels for teaching developmental skills vary considerably. These programs are also called continuing education, adult education, and sometimes they're called remedial, prep, or academic support areas. But the names don't mean a great deal; they are only one state's (or one college's) term for the same programs that are taught all over the nation.

The money's there

What kind of money can you make?

You can earn an average of about \$15 to \$20 per hour, but in some instances it can be a great deal more—or less. You may be able to teach on a part-time basis for 10, 15, 20, or more hours a week, and your monthly income can be from \$700 to \$1500 or more.

As a rule, most colleges offering remedial or continuing education courses will be in the community college system and most of them will not object if you already hold down another job, full-time or otherwise. In fact, it is a safe bet that most of the part-time teachers are otherwise employed or are semi-retired.

Course content

What are these programs all about?

Many of the remedial course programs are designed to help students with poor backgrounds get their feet on the ground and learn the basic skills needed to take and pass regular college work. Three major areas are in English grammar and composition, basic or remedial math, and "study skills." You may need to have a college degree to teach in these particular programs, but some schools may be happy to hire you without one, particularly if you have background skills that are considered equivalent to a college education.

In the continuing education courses, however, there are almost no limits to what can be taught or learned and you won't need a degree. The rule of thumb is that there must be three basic ingredients: a number of people who are interested in taking the course, an agreed-upon time and place to meet, and a qualified instructor.



Elizabeth Williams teaches basic math, English, and study skills each semester on the community college campus in her area.

For instance, if you are a farrier and have shod horses long enough to be good at it, and if there are a lot of horse owners in your area who want to learn shoeing, you may be hired to teach the course if 10 or so students register, if there are good places for you to meet (for example, at a barn where there are some horses that need shoeing), and a convenient time. The time may be in the evening, morning, noonday, or at midnight. You can meet on the weekends (such as on Saturday morning) or whenever is acceptable to you and your students.

If you are a superb cook or baker, you may want to teach a course in cake decorating. If a dozen or so of your neighbors are willing to sign up and pay a small fee, you can meet in your own kitchen on Wednesday night or Tuesday morning. It really doesn't matter.

Other possibilities of courses include bricklaying, wood-working, calligraphy, creative writing, crafts of all sorts, photography, powder-puff mechanics (for women), auto painting or repair, gun repair, furniture restoring, and a thousand other interest areas. Yes, this is the place to take or teach basket-weaving.

About the only restrictions are that your course must be of a legal and reasonable nature. You may have quit school in the first week of kindergarten because you were flunking sandbox, but if in your life's work you have learned a skill that others want to know, and if you are willing to teach that skill, you may have a job.

Opportunities

Are there really opportunities for this type of part-time work?

Consider this: Dr. Ron Wright, vice president at Cleveland Community College in Shelby, North Carolina, points out that the school employs 50 full-time instructors and 103 part-time teachers. But, in addition, in the college's continuing education department, there are 75 teachers working on a part-time basis.

How are the part-time programs working out? Dr. Wright says emphatically that the effort is an unqualified success.

"Everyone wins," he says. "We are utilizing local expertise in many areas. We can bring in the best local people in specific fields and they typically love to teach and do a great job of it. We have doctors, lawyers, local business executives, civic leaders with backgrounds in essential areas, economic leaders, and highly trained personnel in every area. For our anatomy and physiology classes, for instance, we have a chiropractor as a teacher."

One other benefit to the college (administrators generally agree that both sides of the desk are in winning positions) is that the college (and the state) do not have to pay retirement benefits, health insurance, and the other perks that go along with teaching. So the state saves a great deal of money.

Do the students get a fair shake?

"Absolutely," says Dr. Wright. "We find the best possible people to teach the classes. In the remedial English, for example, we might hire a college or university professor who took early retirement and now wants to keep in touch with the classroom, and he is delighted to supplement his income by teaching part-time. He can earn \$1000 or more per month in addition to his retirement benefits."

What about in the continuing education of adult education programs?

"There are hundreds of people out there who have devoted 20 to 40 years to learning a trade, such as woodworking," Wright said. "They can come in and teach adults who want to learn to do basic woodworking. The man with decades of experience is perhaps a better teacher than the man with a college degree and very little experience."

How to you go about getting such a job?

First of all, you must have some knowledge, skill, or art that others want to learn. Suppose you are a pot-

ter with many years of experience, and you have calls regularly from people who want you to teach them how to throw a pot. You can't make any money by teaching one person at a time. Or if you make your fees high enough to pay you for your time, you won't have any students because they cannot afford your charges.

For instance, if you charge \$15 hourly to teach one student and if he studies under you for three months on a nine-hour per week basis, he will spend more than \$1600 for the lessons. But if he signs up in a course, along with a dozen or so other students, he will pay a fee of perhaps \$25 and you will earn your \$15 per hour. But 12 students at \$25 is only \$300, so how's it possible to still make \$15 per hour? Remember that the college isn't trying to make money but to provide for a community need or desire, and they will make up the difference.

The point is that you make your money and the students get their education on a bargain-basement level. Everybody wins.

Just a homemaker?

But what if you are just a homemaker (and I don't mean *just* a homemaker: there are many wonderfully talented people who are with their children daily because they want to be, not because they can't get a job) but you have a talent for sewing, baking, home decorating, or crafts. You can perhaps get a job and make as much as \$500 or more per teaching quarter by teaching an adult education class for three hours one night per week.

The beauty is that you can teach the same class quarter after quarter or semester after semester, year after year. If you have enough students, you can teach more than one night a week. In fact, you can teach every night if the student demand is there.

Suppose you do, in fact, teach Monday through Friday. That's 15 hours per week at, say, \$15 per hour, or \$225 per week. For a 12-week quarter, that's \$2,700. If you teach all

four quarters, your earnings are more than \$10,000.

But don't you run out of students eventually? Soon, won't everyone in the county who wants to learn what you teach have taken the course?

That really doesn't matter. You can teach the same people course after course. You can move on to advanced material, or you can offer different methods of doing the work. For example, one of the courses in great demand is that of cake decorating. You will never be able to teach all there is to know about decorating cakes, and the students couldn't learn it all even if you could teach it. So there will be repeat students for years to come.

You don't have to give grades to the adult education students in the continuing education areas. The students are not working for a degree but for self-satisfaction. You don't have to make out and administer tests, and you need

to grade no papers. All you do is go into the classroom and teach.

So what's your talent, skill, or art? Do you have neighbors or friends who want to learn to do it, too? Do you have an ideal place to meet? Is there a time convenient to you and to all of your students? Are you qualified to teach the course? If you gave the right answers to all the questions, why not call the dean of the continuing education department and ask about the chance to teach the material. You can

lose a few minutes on the phone. You can gain a pocketful of dollars.

A final note: the colleges are serious about these courses. You are not educating future brain surgeons, but neither are you to consider the courses a three-month party. Give the students what they came for, and they will come back for more. And you'll get to know the bank teller where you make your deposits much better, and everyone will be happier. Δ

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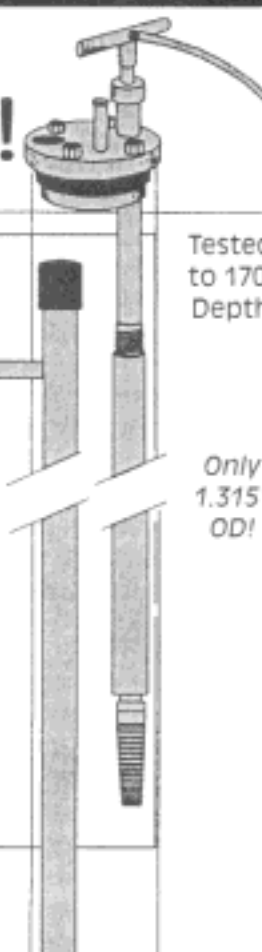
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Sadly, at least four upstart mills claiming "Country Living Mill" virtues and looks have appeared out of the Y2K melee. All of them make wondrous claims (some preliminary examinations show workmanship and quality to be haphazard and shoddy) but none can make this most important statement of fact: **"For 25 years we have been manufacturing as a family business (in America) the world's finest and most acclaimed quality hand mill—the Country Living Grain Mill. For all of those 25 years our family has serviced and stood behind the Country Living Mill without question. In fact we are so sure of our past we can easily and proudly say that any Country Living mill purchased will have a lifetime warranty!"**

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Ramps: Better than garlic breath

By Ben Crooksbanks

Every spring, a unique phenomenon takes place in the Appalachian hills—the digging and eating of ramps. In parts of West Virginia, Kentucky, Tennessee, and North Carolina ramps are a delicacy and eating them is a long standing tradition. I had a great-uncle who firmly believed that if he could get a good mess of ramps in the spring, he could live another year. I suppose it was true. He died one year while the ramps were being cooked. Anyway, I don't take chances; every year I always eat a few as early as possible, just to make sure.

The ramp or “wild leek” (*Allium tricocum*), like onions and garlic, is a member of the lily family. Ramps love the shade and can be found growing in rich soil from western New England, south to Georgia, and west as far as Minnesota and Iowa. By the way, the word “Chicago” is a rendering of an Indian word for ramps.

Finding ramps

Ramps are one of the first plants to come up in the spring; they peep up out of the ground just after the winter snow melts. Snow doesn't hurt them. I remember once digging ramps with a couple of inches of snow on the ground. You located them by the tips of the leaves sticking up above the snow.

They have a bulb similar to a green onion and two or three flat narrow, pointed leaves 8 to 10 inches long and a couple of inches wide. By summer, the leaves are wilted and withered away. These are replaced by a long naked stem with a cluster of spokes on top. At the end of the spokes are tiny white blooms. The bloom is rich with honey and the plant is pollinated by bees. The small black seeds look like no. 6 shot.



Cleaned ramps

The ramp eating season only lasts roughly from April first through May. By that time, they start to wilt and are too strong to eat. People start to dig them as soon as they are up. Some eager, gung-ho types will go out to an area where they were the year before and dig them before they are up. At that time, they're not much more than a little bulb. I like to wait until later. That way, you get more for your effort.

The whole plant is edible either raw or cooked. Ramps have a scent and

taste similar to an onion, only a bit more potent. They are enjoyed mainly in the Appalachian and Smokey Mountains. Several years ago, two West Virginians were arrested in a Cleveland park one night while they were digging ramps. A newspaper story said they were arrested for digging up a “plant with a rank odor.” The police and the newspaper had no idea what it was.

The perils of ramp breath

Like onions, you can enjoy ramps for several hours after you eat them. Every time you burp, there they are. But heaven help the poor devil you come in contact with who hasn't eaten any. When they are eaten and mixed with the gastric juices, the smell is enhanced and greatly magnified.

Ramp breath can only be described as a stench of a royal order. Garlic breath can't hold a candle to it. I mean it will almost curl the hair in your nose, and mouthwash or breath mints won't faze it. The only immunity is to have eaten some yourself. While onion or garlic breath is usually gone



A bed of ramps growing in the woods

by the next day, ramp breath lingers on for up to two or three days, depending on the individual's metabolism. The smell also oozes out through the pores of your skin.

As with poison ivy and dogs that have been sprayed by skunks, everybody has a cure for ramp breath. An acquaintance of mine is an insurance saleslady. She is fond of ramps, but her job requires her to deal with the public face to face. Her solution is to drink two tablespoons of vinegar immediately after eating ramps. No doubt it works for her because ramp breath is one form of halitosis people will not hesitate to tell you about. It usually happens something like this: You start talking to someone and they immediately raise their eyebrows and look very uncomfortable. They take a few steps back and say, "You've been eating ramps, haven't you?" There are two types of inflection used in delivering the above question. One is a tone of disgust, conveying the impression, "You terrible person, how could you eat those awful things?" The other is a tone of envy or jealousy, as if to say, "You've had some already and I haven't."

Anyway, vinegar doesn't work for me. Since everyone's digestive system is a little different, it might work for some and not for others. After you try ramps and become hooked, you tend to get very callous. Your attitude is, "They are so good, I'll eat them and just let the world suffer." Of course this attitude can get you into trouble. Some schools will suspend a student for eating ramps. A few doctors will flatly refuse to see a patient who has eaten them.

The late Jim Comstock, colorful editor of *The West Virginia Hillbilly* and *The News-Leader*, decided one year that everyone should have the opportunity to smell a ramp. Since he mailed his newspapers all over the state and points beyond, he figured the best way would be to have a chemist friend of his chemically reproduce the scent of a ramp and he would add it to

the ink he used to print *The News-Leader*. One paper was enough to contaminate a whole sack of mail. The Postal Service didn't appreciate Ole Jim's humanitarian effort. They told him if he ever pulled that stunt again, he would lose his second class mailing permit. He countered by saying he was the only publisher in the country with a "...paper required by the Federal Government to smell good."

Up until Comstock's death a few years ago, *The West Virginia Hillbilly* was published in Richwood, West Virginia, "The Ramp Capital of the World." Cities in other states make the same claim. Nevertheless, Richwood is the site each spring for the "Feast of the Ransom." People from all over the United States make an annual pilgrimage to Richwood for this ramp feed. The "Feast" is held on the second weekend in April—weather and Easter permitting.

Preparing ramps

The most common way to prepare ramps is by frying (in bacon grease), either alone or with scrambled eggs, potatoes, and sausage or bacon. They can be eaten raw or cut up in a salad. Ramps are high in vitamin C and many consider them a spring tonic.

Organizations such as high school bands, churches, volunteer fire departments, and rescue squads hold ramp suppers to raise money. Traditional menus include, along with the ramps, ham, brown beans, fried potatoes, and

corn bread. All washed down with another spring tonic—sassafras tea. Selling tickets is never a problem; the hard part is digging and cleaning the little buggers.

It takes about 100 bushels of uncleaned ramps to feed 1,000 people. When cleaning ramps, you first peel the skin and dirt down off the bulb and cut the skin and roots off the bottom. This gets rid of most of the dirt and crud. Still, to do the job right, they have to be washed several times. After they are cleaned, they are parboiled and frozen. On the day of the supper they are thawed and fried. Like other greens they cook down a lot. It takes about one bushel of uncleaned ramps to make one gallon ready to be frozen.

Personally, I don't like ramps cooked to death. I like to cut them up and saute them in olive oil, and before they change color, I dump in scrambled eggs. Overcooking ramps gives them a sweet taste I don't care for.

One sad note. Ramp dinners draw big crowds of people, and in election years big crowds of people draw big crowds of politicians. Oh well, you have to take the good with the bad. Δ



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Naughty peppers

By Alice Brantley Yeager
(Photos by James O. Yeager)

If you are prudish, narrow-minded or puritanical, read no further as this article may offend you. If, however, you enjoy a good laugh and can tolerate some earthy humor straight from the garden, read on.

For many years some of us have been cultivating a pepper known simply as the Peter Pepper. No fancy title. No one ever calls it anything else. Its appearance says it all. Like many heirloom plants, Peter Peppers seem to have survived by their seeds being passed around among gardeners. If Nature dealt you a bad hand and your crop failed, you had to start from scratch and inquire as to who might have seeds to share. You had to be discreet in your quest, as some gardeners, particularly those of excessively high moral standards and without much sense of humor, took a dim view of someone

hunting Peter Pepper seeds. Now the seeds are available from the company listed at the end of this story and customers may place orders without having to upset any prissy people. (I hope the company is ready for the onslaught of orders that are bound to come in.)

When you can get past the guffaws, titters, and remarks from visitors viewing your Peter Pepper patch, you can explain that the Peter Pepper is one of the best hot peppers to have around. It is not so hot that it is like consuming fire and it is not so mild that you wish it had more zip. It is just right to add flavor to anything in which you'd ordinarily use some hot pepper. Finely chop one of these peppers in a pot of beans, peas, gumbo, chili, etc., and watch the diners liven up.

Peter Peppers are not hard to grow. If you can raise hot peppers of any kind, you can raise these. The best growing conditions involve a sunny spot in the garden, moderately rich soil and the

same amount of water you'd give any other pepper plant when drought threatens.

Plants may be started indoors during February and transferred to the garden after the soil warms up. Using a sterilized potting soil, start the seeds in a seed starter with controlled temperature of about 70°F. The sterilized soil will prevent small seedlings from falling prey to damping-off. This is the condition wherein seedlings wilt just after emerging from the soil and is caused by fungi living in the soil. If you do not have a seed starter, plant your seeds in a plastic or clay pot in a sunny window making sure that the container is kept reasonably moist.

When seedlings have developed 3-4 small leaves and are about 1-2 inches tall, transfer them to peat pots still using the sterilized potting soil. Water them with a good organic plant food and wait until weather conditions are suitable before transferring them to

Canned, sliced Peter Peppers

There are a lot of recipes around calling for Jalapeno pepper rings. Try substituting Peter Pepper rings from your own pantry.

1. Gather fresh Peter Peppers, rinse with cold water and slice crosswise into $\frac{1}{8}$ to $\frac{1}{4}$ -inch rings. (It is not necessary to remove seeds.)

2. Mix enough lime water solution to cover amount of peppers you have. Solution is mixture of $\frac{1}{4}$ cup powdered lime to 1 quart cold water. (Always use stainless steel or porcelain vessels—never aluminum.) Stir occasionally as lime does not completely dissolve and has a tendency to settle. Soak for 3 hours.

3. Rinse thoroughly to remove lime. Soak in clear water for 30 minutes. Drain in colander to remove as much water as possible.

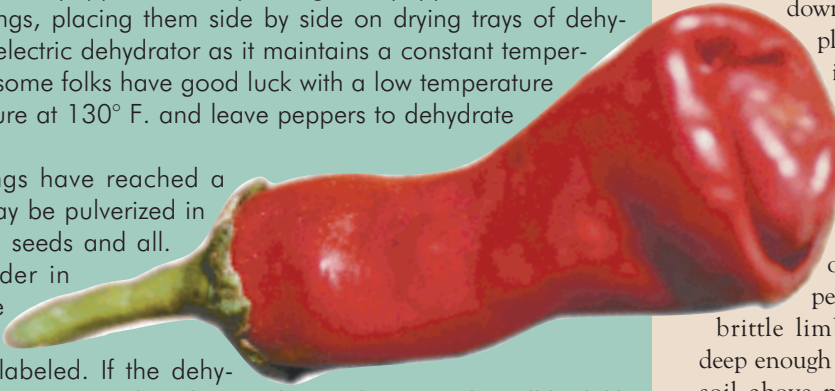
4. Put peppers in a stainless steel or porcelain pot and cover with apple cider vinegar and a sprinkle of salt. Bring to a boil long enough to thoroughly heat peppers. Pack pepper rings into sterilized half pint or pint jars, cover with hot vinegar solution, and seal. Let jars sit covered with a kitchen towel in a place free from drafts until you can no longer hear seals pop in place. Check to be sure all jars have sealed before storing in pantry. Any unsealed jars may be refrigerated or returned to stove to re-heat and given another try.

Peter Peppers-dehydrated

Use only clean, fresh peppers for dehydrating. Cut peppers crosswise into thin $\frac{1}{8}$ -inch rings, placing them side by side on drying trays of dehydrator. We use an electric dehydrator as it maintains a constant temperature, but we hear some folks have good luck with a low temperature oven. Set temperature at 130° F. and leave peppers to dehydrate for several hours.

When pepper rings have reached a crisp stage, they may be pulverized in an electric blender, seeds and all. Store pepper powder in small clean jars. Be

sure the jars are tightly sealed and labeled. If the dehydrated Peter Peppers were mainly red ones, the resulting powder will look like paprika. Unlabeled jars can lead to a hot time in the old town tonight.



their permanent spot in the garden. These are warm weather plants. Don't plant early in the season.

Peat pots are becoming increasingly costly, but they do have the advantage of being biodegradable so that plants—pots and all—may be put in the ground. Cheaper pots, however, may be often found on sale in the form of packets of 6.4-oz., styrofoam cups (coffee cups). Just punch a small hole in the

bottom for drainage and proceed as with the peat pots. Plants will have to be removed from the cups as carefully as possible to avoid root damage, but any gardener worth his keep can do it. A fringe benefit to the cups is the fact that, unless you crush them, you can rinse them out thoroughly and stack them back to use again.

It's important to avoid sunscald when exposing young plants of any kind to

the garden environment. This is the condition that occurs when transplants leave the protection of indoors and move directly to the garden. Leaves actually look like they have been scalded and often the plants don't recover. The best way to avoid problems is to set trays of plants outside daily for a couple of hours in a sunny spot protected from wind. Over a period of several days gradually increase the exposure time and, chances are, you won't have one sunscald victim when the plants move to their permanent places.

Peter Peppers thrive in a sandy loam soil with pH factor of 6.0-6.5. It's best if soil is not extremely rich, as rich soil tends to produce more foliage than peppers. Peppers need moisture, but will not do well under boggy conditions. When summer's drought threatens, it's well to apply a good organic mulch of grass clippings, leaves, etc., to help conserve moisture. (Avoid using anything with seeds, as you'll be doing yourself no favors.)

If you want beautiful plants loaded down with peppers, space these plants about 15 inches apart in rows about 3 feet apart.

(Two rows are sufficient in 4 x 8 foot raised beds.)

This spacing makes it easy to move among mature plants without fear of breaking limbs, as pepper plants of any kind have

brittle limbs. Plants should be set deep enough to allow at least an inch of soil above peat pots as the pots will "wick off" moisture if left exposed above ground. Also, proper planting will help the plants to develop good root anchorage and they're not likely to topple over after heavy showers.

After transplanting be sure to water plants well to settle the earth and remove any air pockets.

I like to use tomato cages around all pepper plants to help support limbs when they are heavy with peppers, and I prefer putting these out at the same time that I transplant. Plants grow up into the cages eliminating the need for

stakes and tying. Mature Peter Pepper plants are usually about 2 feet tall with peppers 4-5 inches long.

Hot peppers seem to be less vulnerable to diseases than bell peppers. I have never lost a Peter Pepper or any other hot pepper to a virus, whereas various viruses and wilts will sometimes play havoc with sweet peppers.


When harvesting, it's best to cut the pepper stems with a sharp knife or clippers, as pulling them loose will often cause limbs or blossoms to break off. In the kitchen it is a good idea to protect one's hands in some way while cutting or chopping peppers. Hot peppers contain a concentrated irritant called capsaicin which has brought misery into the lives of many pepper handlers. Plastic gloves are helpful, and if those aren't available try protecting your "holding" hand with a pint size plastic freezer bag. Whatever you do, try to avoid touching the cut part of the pepper.

Peter Peppers may be used in the same ways as other hot peppers. Try canning them to use on nachos. Use

them in casseroles, soups, gravies, etc. (see recipes). They have a high concentration of Vitamin C. If you are plagued with sinus trouble, try eating some chopped fresh Peter Peppers in your

beans, rice, etc. If they don't cure the trouble, they'll certainly take your mind off of it! A seed source is Totally Tomatoes, P.O. Box 1626, Augusta, GA 30903-1626. Δ

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



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JACKIE'S TIPS

for hardcore homesteading

By Jackie Clay

Many of us have a garden and enjoy fresh vegetables during the summer and fall. Maybe we even have a few chickens for eggs and meat. But many of us may want to extend our homesteading to what I call “hard-core” homesteading. This is serious homesteading, aimed at being able to provide your family with nearly all of its basic needs.

Luckily, most of us with a piece of out-of-the-way land can become nearly “store-bought-free,” raising much of what we need in nearly the same way as did our ancestors.

There is a vast difference between this type of survival homesteading and stars-in-the-eyes, back-to-nature, recreational homesteading to relieve stress and provide enjoyment. The difference is not so much in how-to, but in discipline and learning.

The survival garden

It has been said that one can raise enough food for a family of four in a 50- by 50-foot space. While such an area can provide a goodly amount of food, there is no way a family could survive, year-round, off such a small patch. In reality, all that this is is a “house garden” for providing fresh produce such as greens, broccoli, cabbage, peppers, herbs, etc.

When one needs a garden to put up food, not only for the winter but possibly for a year or two, we’re talking about at least an acre of intense cropping.

This includes a patch of wheat for grinding into cereal and flour; flour corn for hominy and corn meal; sweet corn for eating, canning, and dehydrating; and rows of dry beans as well as fresh beans (yellow wax, green, pole, etc.) for putting up. Here we stumble on the weak link in most folks’ gardens. They say “We only use

a few pounds of corn meal or dry beans a year,” and they feel confident they can get by with just a few packages of such items, bought at the grocers.

But having lived in a wild corner of Montana, well above the “grocery line” (because of road accessibility), I can tell you that you will use many more pounds of these staples when you cannot eat from the store shelves.

And if there are no store shelves to choose from, we will all need to take care of our own needs at home. Remember, it takes more than one year to get a garden into full production. You can’t just plow up a plot and expect to survive off of it, especially if you lack experience.

You can’t grow everything, everywhere. Look at your local production capabilities. Here in New Mexico I can grow anything. In the high country of Montana, nearly everything was a challenge even though I’ve gardened all my life. But we could survive from my Montana garden with potatoes, wheat, and beans along with a number of cold-loving crops we grew. What you need to do is put your energy into growing what will make a crop in your location.

But don’t be afraid to experiment. Everywhere I’ve gardened I’ve grown crops that locals said “wouldn’t grow.”

To better use space, consider interplanting as much as possible. Grow cornfield beans among the flour corn, radishes in the same row as carrots, peppers between rows of tomatoes (which act as windbreaks), pumpkins and squash next to a corn field where they can run into the corn after cultivation has stopped. (Don’t do this



A few rows of beans will produce quarts and quarts.



A survival homestead needs a large, productive garden.

with sweet corn or you will have a devil of a time picking the corn stumbling among rampant squash vines.) Inter-planting will do much to save garden space, a large consideration in survival gardening, especially when you must cultivate and till by hand.

Crops for a survival garden

Everyone who gardens grows some things just because they enjoy the taste. This is great, and we all do it. But in hard-core homesteading, we must consider our basic needs, as well.

We need to grow enough grain and corn for ourselves and livestock. This can be done by hand, in a relatively small plot, provided that our poultry and livestock needs are small. If you need more grain, say for cattle or horses, consider small scale farming with horses. This is a sustainable way of living as horses are easy to work, versatile, and provide manure for the fields. They also require no fuel to run. One team of moderate-sized horses can do as much work as a small tractor and cost little to maintain.

As little as an acre of ground can supply modest grain needs for a fami-

SUGGESTIONS FOR A SURVIVAL GARDEN

- green beans, pole & bush
- sweet corn (various maturing dates)
- yellow wax beans
- carrots
- dry beans (several types)
- tomatoes (several varieties)
- potatoes
- turnips
- rutabagas
- cabbage
- broccoli
- cauliflower
- cucumbers
- onions
- greens of several types
- spinach
- lettuce
- peas (dry & green)
- pumpkins
- summer squash
- winter squash
- muskmelon
- watermelon

ly homestead. Include a bit of rye, oats, and barley for variation. (There is a naked-seeded oat that is great for homesteaders, as at home one has a difficult task in hulling oats for oatmeal.)

Besides small grains, include your rows of flour corn for corn meal and hominy, being sure to include enough for livestock feeding.

Most folks have to double or even triple the amount of usual garden produce to allow for putting up as much each year as possible. Be sure to allow for lots of tomatoes for tomato sauces, and enough root crops, such as turnips, potatoes and carrots. (You'll eat a lot more "homegrown" when you can't run to the store for "quick" meals.)

With all survival garden vegetables, a family should buy only open pollinated varieties. This will enable folks to save seeds from year to year, which is not recommended with hybrids. Hybrid seed, while usually fertile, can not be depended upon to reproduce



Small fruits go a long way to alleviate hard times.

truly. And, contrary to popular belief, most of those old open pollinated varieties are good tasting and hardy.

Perennial for the survival garden

Along with the vegetables, a hard-core homesteader should establish a good variety of perennial edibles. These include asparagus, Jerusalem artichokes, horseradish, garlic, perennial onions, and herbs for both culinary and medicinal use. Remember to encourage native perennial edibles which do well in your area. These may include prickly pear cactus (the fruits and pads are eaten as a vegetable), wild rice, wild greens, cattails, mushrooms, etc. In a survival situation, one truly appreciates variety in the diet.

The perennials have the advantage of having to be planted only once and usually expand on their own with little human help. And, like the annuals, which must be planted each year, a



Chickens provide both meat and eggs for a survival homestead.

family can gather and put up many jars full of winter eating. I can wild and domestic asparagus, wild mushrooms, wild greens, cactus pads (known as nopalitos in the southwest),

and dry many other wild and domestic perennials.

Small fruits are nearly essential

Nearly everyone has room to plant a good selection of small fruits. These include strawberries, raspberries, blackberries, rhubarb, blueberries, and so forth. Luckily, once a patch of each has been established, one can readily take divisions or replant sprouts to greatly increase their food-producing capabilities.

As with the vegetable garden, one should grow as great a variety of small fruits as possible, and enough of each to put up significant jam, preserves, and canned and dried fruit. In hard times, a good loaf of hot whole wheat bread spread thickly with homemade strawberry jam, or a steaming blueberry pie, makes the term "survival" a joke. We call it living good.

You quickly discover that small fruits are a wonderful treat that can be easily turned into strawberry shortcake, blueberry pancakes, rhubarb tarts, blackberry cobbler, etc. In hard times, you don't eat many candy bars; instead you substitute healthier fruit snacks and desserts.

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Even picky eaters greatly enjoy dried fruits and fruit leathers which are easy to make at home.

Every homestead should include a small orchard

Even the smallest homestead has room for fruit trees. With the variety of tree sizes and shapes, you can choose full-sized trees which are tremendous producers, but take room and several years to begin bearing fruit. Semi-dwarf trees, which usually require only a 10- by 10-foot spacing, produce full sized fruit in moderate amounts and only take a couple of years to bear. Dwarf and "pole" trees, which produce full sized fruit in small amounts, can be raised on a patio in a portable tub.

A hard-core homesteader can get by with two each of several varieties to provide variety and cross-pollination. I'd suggest apple, pear, pie and sweet cherry, apricot, and plum for most gardeners. Of course, if you can grow citrus in your zone, go for it. We live in zone 5 and have two Brown Turkey Figs in a protected corner of our east flower bed—protected by the house from the killer winter north winds.

Now a lot of folks say they'd need acres and acres to reach this level of self-reliance in the food department. Not so. My grandmother did it on two city lots in Detroit. Instead of normal landscaping, nearly everything she grew produced edible fruit: peach, grapes, brambles, quince, asparagus, apple, crab apple, strawberry, etc.) Having gone through the Depression as a widow with two young boys to raise, Grandma knew how to fend off hard times.

But what about meat?

Like produce and fruit, a family can grow all of their meat requirements, right at home. Now few people actually like to kill to eat, but when it comes down to eating or not eating meat, most of us can find a way around our revulsions. After all, someone had to

kill that steer that went into your Big Mac. It gets ridiculous when visitors won't eat a home-butchered beef roast but will buy a tainted, chemical-laden piece of plastic-wrapped roast at the supermarket and eat it with abandon.

Folks on a very small acreage will usually have to limit their meat production to poultry, rabbits, and perhaps a little goat meat. A small flock of chickens for egg and meat production, with a couple of hutches of rabbits and the castrated male offspring of the family dairy goats will do much to help out at the dinner table. Of course, a family with these reduced production capabilities will not eat meat every day, but it will be able to enjoy regular meals with meat as a feature.

The benefit of having only a small poultry flock, a few hutches of rabbits, and very few goats is that the feed requirements and labor requirements are also minimal. In such cases, a family can easily hand-raise and harvest all feeds necessary to maintain their meat and egg supply.

Small-holders can help supplement their meat needs by hunting and fishing. But remember, if times are hard nationwide, subsistence hunting will become very difficult in most areas, as it did during homestead days and during the Depression. The game quickly disappears with overhunting. Fishing holds up much better, so it benefits a family if they hone fishing skills before they are truly needed. (Besides, it's enjoyable family "work," as well.) For lucky backwoods dwellers who live near the seacoast or a salmon stream, fishing can well be the major source of family meat.

Folks with more acreage are in better shape to truly be meat self-reliant. Using horsepower to till moderate amounts of land, a family can raise enough small grain, field corn, and forage (hay and pasture) to maintain not only the horses but a couple of dairy cows or several dairy goats. Let me stop right here and address you

folks who are saying, "Goats! No way am I going to raise those stinking tin can eaters!"

Goats do not eat tin cans, nor do they run around butting people, any more than do cattle. Goats are exceptionally clean, picky eaters, refusing to take a bite of the apple you just took a bite out of, and they'll dehydrate before they will drink from a bucket containing even one berry of manure. Only bucks in rut have any odor. While in rut they will spray their neck, belly, and chin with urine as an attractant to does in heat. So do elk and deer. The normal scent glands on a buck's head, which produce scent during rut, can be removed by surgery when the buck is an adult or during disbudding, leaving a scent-free male totally capable of breeding. Does never have an objectionable odor, and with neat droppings the pen is quite clean and odor-free with even minimal daily maintenance.

We've had both dairy goats and cattle, and we know the benefits and drawbacks of each. Both produce milk which is equally good-tasting. A goat often produces multiple offspring while a cow produces one calf a year.

Cattle are easier to fence in, but goats will do great in a pasture grown over to willows and brush as they are by nature browsers like deer. And, like deer, they can hop a four-foot field fence to enter your young orchard and strip the tender trees of their bark and twigs. Cows produce beef; goats produce chevron. Both are good, but different.

Chevron comes in carcass weights from between 20 and 100 pounds of dressed weight, depending on age. They are easier to cut up and handle, but their small carcass lasts a much shorter period of time than a 600-pound Angus carcass.

Remember that worldwide there are thousands more goats used for meat and dairy production than there are cattle. There are reasons, and economy is at the top followed by the quick-

ness of meat consumption in areas without refrigeration. A 600-pound cattle carcass is likely to spoil before it's completely consumed.

Pigs are another cog in the serious homesteader's wheel of self-reliance. Not only can a few pigs easily be raised for butchering—being fed from home-produced feed, kitchen and dairy waste (skim milk is an excellent food), along with weeds, pasture, and hog-foraged feed—but they provide excellent meat with a carcass that is quite easily handled by the family. The bonus of hogs is that they produce lard, the only homegrown cooking fat easily obtainable.

Yes, I know about high cholesterol, but let me tell you that when you are working hard everyday to put food and other necessities on the table, your cholesterol will balance easier than your finances.

Homegrown dairy products

Okay, so far you have a good vegetable plot, small fruits, small grains, and an orchard and meat/egg supply started. It's time to think about dairy products, particularly milk and cheese. After that stored dry milk is gone, your family will want something to replace it. And what is more natural than learning to run a tiny kitchen dairy and cheese plant? All dairy products are quite easy to produce at home, and as with almost everything else, it's much better when homemade.

I've made cottage cheese, cream cheese, mozzarella, colby, cheddar cheese, sour cream, cheese spreads, balls, logs and sandwich loaves, ice cream, ice milk, sherbet, and more regularly at home, both from cow and goat milk. Butter and whipped cream are easier to do from cow milk, as the cream quickly separates out, floating to the top. Goat milk is naturally homogenized and it takes more "doing" to access the cream. Both animals' milk produces good-tasting dairy products.

A good milking doe goat will produce about 3 quarts each milking, on average, where an average milk cow will produce much more—about three gallons. So your choice will depend on your facilities, labor and needs. Remember that all "extra" milk can be used to produce dairy products such as butter (which can also be used as a cooking fat) and cheese; dairy by-products can be fed to chickens and hogs. Extra milk can be used to bottle feed young calves or kid goats. On a survival homestead, there is no waste!

When planning on establishing a home kitchen dairy, be sure to stock up on such things as rennet tablets, which make forming cheese curd much easier and more reliable, cheese cultures (as you need for some "fancier" cheeses), cheese cloth and a cheese press or the materials to make one. These materials can be as simple as a #10 can or a 4-inch piece of PVC pipe and wood.

Okay, now we have your family ready with a vegetable garden, small fruits, grains, orchard, meat/eggs, and dairy production. Pretty nifty, right? You bet. For now you can also make soap from used cooking fats, which you can save in a can after each use. Soap making is easy and glitch free, requiring only strained, clean used fat and lye (which can be produced by seeping water down through wood ashes). This soap is great and can be used to wash clothes, babies, and hair.

Add a hive or two of bees, and your sugar requirements are easily met. Then too, the bees will pollinate your entire garden, grain patch and orchard, ensuring bountiful harvests. Bees are easily established and easy to work with. I've only been stung twice working with domestic bees, and probably a few dozen times by "wild" bees.

Survival homesteading is addicting. Once you get started, your mind works constantly at ways you can do more to be less reliant on the system. Now I say "can do" as few homesteaders actually practice every bit of their knowledge. I can raise and shear

sheep, spinning wool into yarn to make clothes. And I can tan hides from which to fashion clothes and footwear. But I choose to use my time in other ways, which are more productive to the family at present. But the knowledge is there, should our needs change.

Survival homesteading is rewarding, financially and spiritually, as a basic instinct in human beings is to provide for their own and their family's needs. Never become overwhelmed by feeling that you must do everything at once. It is better to proceed in steady forward steps, rather than to run forward, fall and lose heart. One vital tip: start small and work your way up as your ability and knowledge increases. Your survival homestead depends on it. Δ

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Running your own business — a mother's perspective

By Ilene Duffy
BHM Business Manager

When my middle son, Robby, was a baby, he had two seizures. After the second one the doctor informed me that I needed to get him to the hospital for various tests. I told my husband what needed to be done, picked up my purse, the diaper bag, my baby, and left for the hospital. No phone calls needed to my employer's secretary. No explanations to a supervisor. No questions asked. We had our own business. We *were* the employers.

This quiet episode has been a symbolic memory for me of the grand benefits to owning and operating our own business. Living in the country as we do, with its hard-to-find jobs and low wages for the jobs that do exist, operating our own family business has proven to be a way to restore the income my family once enjoyed from jobs tied to the city.

Since family businesses usually require that both the husband and wife work, the challenge is to combine the needs of the business with the needs of your family. This is a brief look, from a mother's perspective, of my role in our family business, and how beneficial the business has been for our family. Perhaps it will get you thinking about how you can translate your skills into your own family business.

The beginning

I was a kindergarten school teacher when I met Dave Duffy, *Backwoods Home Magazine's* publisher. On our first date he brought over the second issue of the magazine "hot off the press." I was impressed not only with

the content of the magazine but also with one solitary man's ability to complete such a project. He was obviously a hard worker, which is one of the most important attributes needed to run your own business, and he could have been the poster boy for Nike with his "just do it" attitude. I wish I had a nickel for every time he's said "you just put one foot in front of the other and before you know it the job gets done."

I don't think I alone would have had the gumption to begin my own business, but I have the work ethic to help make a go of the business Dave began. Besides, two heads are better than one, and as it turns out we complement each other nicely. He's the idea maker, I'm the one to say let's think this through. He'd rather throw away the bank statements, I balance the checking account to the penny. He's the deal maker, I'm the shy one doing the behind-the-scenes work.

Throughout the 10 years of publishing *BHM*, I have often been amazed at how creative people can be when figuring out how to make their own livelihood. The most successful new small businesses are quite often husband and wife teams, like Dave and me. Usually one of the pair is the "go-getter" while the other partner is that all important detail-oriented type. You need someone to be able to find those receipts and bank statements when the tax man needs them, and you need someone to figure out an organized way of handling the many intricate "must get done" details of the "business" side of your business.

That has been my contribution to this enterprise. That kindergarten teaching experience has come in handy with my ability to manage lots of details (You'd better have all the



Ilene Duffy and youngest son, Sammy, take a snow break.

materials ready for an art project or you get to stare into 32 five-year-olds' eyes wondering what to do next. It's scary!).

The details I manage consist mainly of bookkeeping: keeping track of the money coming in and going out, doing the payroll, getting accurate tax information to the accountant, filing important paperwork away so that it can be found in a timely manner, keeping track of the classified ads, and lots more little chores that make me tired just thinking about them.

That experience as a kindergarten teacher prepared me well for the tasks as business manager of a publishing business, but I've learned a lot too. I've never taken a business, accounting, or marketing course, so "on the job training" was my main teacher. I discovered that the business side isn't that complicated, and the accounting part isn't that hard. It does involve close attention to detail, but if you can



Middle son, Robby, gets computer help from Mom.

add and subtract accurately, you can run the accounting side of any home-based business. The computer programs, Quicken and Quick Books Pro, have helped me keep track of the finances.

Marketing

Another one of my important jobs is marketing. Dave has always been instrumental in the creation of the magazine, whereas my role has been figuring out what to do with the product once it has been created. It's quite a trick to decide how much money to spend on which form of advertising. Do we buy an ad in another magazine, a card in a card pack, a spot on a radio show? I've had good calls and bad calls, but overall we continue to grow. I know I've got a good product, and if I ever figure out how to expansively market this puppy, we'll be living in high cotton.

The benefits

The benefits to running your own business are many. The clock is a less significant presence in your life. It would be hard to go back to the pressure of needing to be somewhere

every working morning at a specific time. Our time is our own. On the other hand, I can't begin to tell you how often we've stayed up late or gotten up early because the work simply needed to get done. But it's still our choice to do so.

Dave and I work well together. Kind of like that song about the horse and carriage, and love and marriage... you can't have one without the other. I tend to like the aspects of the business that he doesn't. I find the challenge of marketing enjoyable and satisfying, while he likes dealing with the writers, organizing and laying out the issue, and writing his column.

I'm sure it's very possible to single-handedly run your own business and we're always looking for stories of people out there who are creative enough to meet that challenge. I tip my hat to all of you with the guts to try. But we need each other for this enterprise.

The financial rewards are important to consider. My teaching salary was more than I get paid now and I could count on it like clockwork at the end of each month. Now my pay is not nearly as predictable, but there are

fewer constraints with our expenses. I have no need to buy clothes for an out-of-the-house workplace. Jeans and a tee shirt are good enough. I don't need to travel to and from town as much, because I often work out of my house. I've got pretty much everything I need to work at home. And my kids are here with me. Now there's a benefit.

Our kids have the added benefit of being around a home-grown business. I'd be surprised if they didn't absorb lessons about "working for a living" just by watching all of us at work. Also they have been around computers all their lives, whereas I never touched a computer until I met Dave—and I'm still afraid of the darn things. In a world that will someday be totally computer oriented, the kids are going to need a firm grasp of what computers can do for them as a tool if they are to succeed.

Traveling can sometimes be a business tax write-off. Going to southern California to visit my mother has often been combined with trips to work with our artist of many years, Don Childers. Sometimes family trips to various local sights have been combined with my step-daughter, Annie's, columns. (A word to the wise: get a good accountant to help you figure out what you can claim and how to keep track of it.)

Stress and your health

A huge plus is somewhat intangible to measure—our health. Probably because our time is our own to do as we choose, there is a lot less stress than dealing with someone else's clock, goals, and demands.

The stress that there is—and some people might look at the stack of bills that go along with running this enterprise and wonder how I sleep at night—is easier to manage because this is something we are doing for ourselves. And if I'm organized and know when invoices are due and for how much, it seems to diminish the stress.

A little trick I do with my bills payable is to keep them rubber banded together in my brief case, ordered by the date they are due with the amount of the invoice written on the outside of each envelope. That way I can quickly scan the total amount owed. It's not high tech, but it works.

How do you start

People might wonder how in the world do you start a business? Where do you begin? My husband's brainstorm was to write a book about building his own house in the country. The first few chapters of the book developed into what is now the magazine. He didn't give marketing the product a moment of his attention. He just knew he wanted to live in the country, build his own house, and write.

Most marketing and advertising gurus would say that you have to have a marketing plan and some idea about who wants your product before you create it. That may be so for some businesses, but it certainly wasn't the case with us. We suddenly had a magazine on our hands, created by default from Dave's attempted book, and we went from there, making it the best magazine we could and trying to figure out who would want to buy it. We succeeded by trial and error and hard work.

Others might say you need to go into debt and borrow money in order to have start-up capital for a business. But we didn't. What we did have in the early days of this business were people...good people with talent and a desire to see Dave's dream succeed.

Our computer genius, Tim Green, helped us to set up the original database program used to store the subscription list. A business associate of Dave's, Kurt Warner, gave him a laser jet printer. Our good friend, Jan Cook, typed and typed and typed. Dave's basketball buddy, Norm Boisvert, stuffed hundreds of envelopes with magazines for mailings. Our talented artist for the first nine years of the business, Don Childers, gave willingly

of his time to create the covers, drawings, and illustrations. And our senior editor, John Silveira, wrote articles that were a cut above the average. Dave's enthusiasm was tremendously infectious and was perhaps the one strength that was most needed in the early days of this enterprise.

The personal benefits

One of the best parts of owning *Backwoods Home Magazine* has been the ready availability of good information that I'm interested in myself. As a busy wife and mother, I use the knowledge to help our own family become more self-reliant. I always take heed of Alice Yeager's experience in her garden, and Richard Blunt's culinary information and recipes are read and reread.

Jackie Clay's information on food storage has been an eye-opener. We practice what we preach by keeping our own pantry stocked and organized, but Jackie's knowledge far surpasses mine. This past summer, I felt so proud of my jars of pickles and blackberry jam. There's also great information in Robert Williams' articles on making a living. It's amazing how many ways people can make a living without the usual 9-5 job.

Then there are writers like Joe Hooker and Don Fallick who have "been there and done that" on virtually every aspect of self-reliant living. Even though I don't always understand the details of Michael Hackleman's articles on independent energy, I enjoy learning about something new. And I may not be Mrs. Gun Owner of America, but it's obvious that Massad Ayoob's articles concerning the legalities and responsibilities of gun ownership are of great value to our readers.

I'm also fortunate to have the availability of so many books that we sell through the magazine that help me on the home front. I especially use the books on gardening and the cookbooks. Yesterday I made a delightful quick herb bread to go with a stew. I

found the recipe on page 49 of The Bread Book, A Baker's Almanac. Dave also uses several of the advertiser's products; every morning he makes me a fruit smoothie in our Vita-Mixer.

Learning and learning

I'm learning all the time. It seems lately I get little business lessons just by watching how employees of other businesses treat me. When I get treated poorly, I make a mental note to make sure our employees will not treat our subscribers similarly. Likewise, when I am treated with friendship and good service, it makes me realize how vital an employee's attitude is to the success of a business. We try to teach our staff that it isn't the employer that comes up with the paycheck...it's the customer.

But the very best part of running our own business has been my ability to be with my children a lot more than other working mothers. It's the one benefit that dwarfs all the others. Sometimes I bring them to the office with me, and in fact I have a play and study area set up for them in my office at *BHM*. And even though there are times when I need to be in the office alone, without any kids doing acrobatics on my chair, I thoroughly appreciate having the freedom to be at home with them more often than not.

If you or your spouse have a skill or an idea you think can be translated into your own business, my advice is to go for it. It may require some trial and error, and it will definitely require a lot of hard work, but the benefits when you succeed are worth it.

And, by the way, the doctors never did find out why Robby had those seizures. They said the brain is complicated, and he may never have another seizure as long as he lives. At any rate, Robby and the rest of the Duffy gang of kids are doing just fine, and that's the way I like it. Δ

Visit our website at:
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Ask Jackie

(Jackie Clay invites *BHM* readers to submit questions on any facet of low-tech, self-reliant living. Send questions to *BHM*, P.O. Box 712, Gold Beach, OR 97444. E-mail: jackie@backwoodshome.com)

1. How do you can baked beans and chili? Any particular recipe?

2. How do you can smoked salmon?

James Coffey
Elkton, MD

1. Baked beans and chili are among our family's favorites, especially in the winter when the jars are handy to open and heat, giving a quick (15 minute) homemade-tasting meal for hungry sledgers or wood choppers.

You may use any recipe you like, but you **must** process the jars according to the ingredient which requires the longest processing time in the pressure canner. (You also **must** use the pressure canner for these low-acid foods or risk food poisoning.)

In both recipes that follow, the ingredient which will require the longest time is beans, requiring 1 hour and 20 minutes for pints and 1 hour and 35 minutes for quarts at 10 pounds of pressure (or higher, depending on your altitude; check your canning book, as you **must** use the correct pressure for sure seals and food safety).

A basic recipe for baked beans is:

- 1 qt. dried navy or other small beans (about 2 pounds)
- 2 tsp. salt (to pre-cook the beans)
- ½ lb. pork (side pork, ham, or bacon, cut in small pieces)
- 3 small onions, chopped
- ⅔ cup brown sugar, packed
- 2 tsp. salt (for the finished product)
- 2 tsp. dry mustard
- ⅔ cup molasses

Rinse and pick over the beans, then soak them in 3 quarts of water overnight. Add 2 tps. salt to beans in soaking water and bring to boil. Cover and simmer 'til skins begin to crack. Drain, saving liquid. Pour beans into a baking dish or bean pot. Add pork and onions. If for religious or other reasons you do not choose to use pork, you can substitute smoked venison or turkey pieces. Combine remaining ingredients. Add 4 cups bean liquid, adding more water if necessary to make the 4 cups. Stir, cover, and bake at 350° for 3½ hours. Add water towards last to keep beans a bit "soupy." Pack into hot jars, leaving 1-inch head room. Keep the beans **hot** while putting into jars, and work quickly to get them into canner. Wipe the jar rims. Put boiled lids on and tighten rings firmly, but without force. Process pints 1 hour and 20 minutes, quarts 1 hour and 35 minutes, at 10 pounds (adjust for higher altitudes).

2. Smoked salmon is easy to can. We also smoke and can a number of other fish which also taste great, including trout, whitefish, panfish, and even the lowly sucker which is really good smoked.

Smoke the fish, using your favorite recipe, then cut into jar-sized pieces. Place dry into pint jars; we use wide mouth jars for ease of packing and getting the delicate smoked fish out of the jars. If the fish seems a bit bland, I sometimes sprinkle a bit of brown sugar or salt on it, but this is seldom necessary if your smoking was done correctly. Leave 1 inch of head room.

Wipe the jar rims. Place a boiled lid on and tighten the ring firmly. Process in a pressure canner for 1 hour and 40 minutes at 10 pounds pressure (adjust for higher altitudes, if necessary).

To be absolutely safe, heat in oven at 250° for half an hour in a covered



Jackie Clay

casserole dish, then cool before eating; we just give it the sniff & appearance test, never having had bad results.

Good Canning!

...please ask Jackie if you can use Sweet'n Low or any artificial sweetener for canning instead of regular sugar. Both my husband and I are hypoglycemics and cannot have sugar. I know commercial canners do. What about home canning (jellies, jams, tomatoes etc.)?

Ron & Bernice Knapp
Clearwater, KS

Canning without sugar is no problem. My husband, Bob, is diabetic so we have to watch sugar pretty closely. With all fruit, simply can without it. Then, as it is opened, sprinkle your sugar substitute over the fruit. It's much better this way than when canned with the sugar substitute. Sugar does nothing but flavor the fruit.

When putting up jams and jellies, I use sugar free Sure-Jell. You can use artificial sweeteners in your jams and jellies, as well, but you must use a recipe that does not call for sugar, as some recipes need the sugar to make

the jelly jell. One note: If you use aspartame, add it toward the end of your jam or jelly's boiling, as boiling drastically reduces the sweetness of this artificial sweetener.

Another option is to use very ripe fruits (but not to the spoiling point) and not use any sweetener, but simply boil gently to concentrate the juice, canning as "fruit." Then, on opening, either use as a spread, sprinkled with artificial sweetener if desired, or mix the canned fruit spread with enough sugar-free Jello to jell. You'll have to experiment a bit, as this depends on your fruit and how thick you'll want it. This product may be placed back into the canning jar, but must be refrigerated or it will spoil.

For other canning recipes calling for sugar, you can often substitute such things as very sweet, ripe tomatoes, reconstituted dried tomatoes (which are much sweeter), using more herbs and/or adding artificial sweeteners.

Most newer canning books include a section on sugar-free canning. You can also check with your county extension office for free or low-cost leaflets on sugar-free canning.

It's best to use one of these guides, at least until you get the hang of it. One thing you'll quickly discover is that home-canned sugar-free foods are worlds above the store-bought foods, and a whole lot cheaper to boot.

There are so many choices in grain grinders on the market and every manufacturer claims their design is best. Can you give some pointers on what to look for in an all-purpose grain grinder? What about burrs vs. stones?

Craig Davalos
Boone Grove, IN

You bet there's a lot of choices today in grain mills. Sure, every manufacturer claims theirs is the best, just as many owners swear by their mill. The truth is simple: everyone has their preference, just as there are Ford owners and Chevy owners.

Like in all things, the more you pay for something, the better (i.e. longer lasting, better made, more it will do, etc.) it will probably be. Unfortunately, we have never been financially well off. Thus, we have never been able to buy a \$300 grain mill.

You can grind grains using ancient methods, such as a mano and metate—a stone grinding grain on a flat stone with a depression to hold the flour. I've done it and it really does a nice job quite quickly. But, in real life, I've switched to a hand-operated grain mill which cost about \$50. It grinds all the grain we use, as we use it, which keeps the flour very fresh. (If you grind whole grains and store the flour for any length of time, the flour can get rancid.)

I've used several of the more expensive electric mills, with stones instead of steel burrs, to mill large quantities of rye and wheat. These mills worked well but were rather noisy. I can't see much difference in the flour, but folks will argue that steel burrs heat the flour, making it less nutritious.

One note: a lot of folks have told me they were disappointed in the inexpensive *Corona Mill*; the flour was too coarse. Again, you get what you pay for. The *Corona* is a simple, low-priced mill. It does a great job grinding grain, but to get relatively fine flour you must regrind it at least once, and the finished product will never look like store-bought flour. But before crying too much, read *The Long Winter* by Laura Ingalls Wilder. Ma had to grind their meager wheat supply with a small coffee grinder. I've tried it, and found a mano and metate made much finer flour.

All mills will grind flour, but stone burrs will often plug up when grinding oily things like nuts. But how often does a family grind nuts? Nearly all will grind oats for oatmeal (but you really will have to grow hull-less oats for home grinding), coarse grind wheat for cereal, and corn for corn meal. And they will also grind com-

mon grains like rye. I also use our mill to grind dry hominy for masa harina de maiz, which I use for homemade tortillas and tamales.

I require a mill to have hand-driven capabilities, as one never knows when the power will be out just when you need to grind grain. I also believe that slower hand grinding results in better flour with less dust.

No matter which mill you choose, I think you'll be very happy with it and the wonderful grains you can grind as you need. Then the whole family, and even the neighbors, can enjoy participating in milling grains. Not only do you provide nutritious, fresh flours for your home, but it's terrific entertainment. Δ



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Good garden bugs

By Tom Kovach

There are many beneficial bugs which are available at most garden centers (or can be special ordered) which will help you eliminate the use of chemicals. Here is a list of some of the bugs which help control harmful insects or improve the soil:

Praying Mantises: The only problem with praying mantises is that they have a tendency to eat all bugs, good and bad. But they will clean up insects. If you buy just one cocoon and attach it to a twig or leaf, a hundred or more praying mantises should emerge, and the insects bothering your garden should vanish.

Ladybugs: Ladybugs eat aphids and other pesty bugs such as spider mites, thrips, and mealybugs. Aphids are especially rough on the new leaves of rose bushes and other shrubs. The ladybugs come packaged in a mesh bag or screen-top carton and will stay alive for several weeks if refrigerated.

To keep ladybugs around once you have them in your garden, water the plants so they will not have to go elsewhere for a drink. Release them in the morning when it's cool, or at dusk. Place them at the base of plants. You can apply them from early spring through September.

Green Lacewings: These bugs, which are less than an inch long, are light green and are useful because of their larvae, which are sometimes known as "aphid lions" because of their lion-like

appetites for aphids. They will also go after such pests as spider mites, thrips, insect eggs, etc.

The microscopic eggs come in a paper sack, and they look a lot like meal that you'd sprinkle on your plants. They have a short life span so have to be special-ordered.

Trichogramma Wasps: Don't let the wasp name fool you. These helpful bugs have nothing to do with the stinging kind of wasp. They are gnat-like in size and do not bother humans. But they do lay their eggs inside the eggs of such garden pests as tomato horn worms, cabbage worms, and corn ear worms. When these little creatures hatch, they feed on the bad bugs.



The eggs come on an inch-square card that looks like sandpaper and hold up to 4,000 eggs each. You may have to special-order them.

Place the cards in the garden or attach them to a nearby tree. Make sure you provide moisture for these little wasps.

Beneficial Nematodes: These microscopic worms prey on the larvae of such harmful insects as fire ants, fleas, grub worms, and flies. They are so small that a package that covers 8,000 square feet holds 12 million little nematodes.

Soak them in water for 15 to 20 minutes, then strain the liquid and apply it to the yard with a watering can or a



hose-end sprayer with the screen removed. Keep the lawn moist for a month or more so that these little bugs can work themselves into the topsoil.

Earthworms: Earthworms do not eat garden pests, but they are very good for the soil. They aerate the soil, allowing water and oxygen to be absorbed by plant roots. They also enrich your soil with their castings (droppings), adding nutrients and minerals which plants need.

You can buy either the red wigglers or the brown-nose manure worms. They come in bucket, bag, or a foam cup, along with some soil or compost.

Keep earthworms moist until you release them in your garden. Dig a foot-deep hole in the garden, adding a little compost or worm castings and cover the worms with soil. Or you can release them into your compost pile. Make sure you put them outside of the pile, because the heat on the inside would bake them.



Most of these beneficial bugs are quite inexpensive to buy, and it's nice to get away from chemicals in controlling your garden pests. There are other beneficial bugs you can find out about by talking to the knowledgeable people at garden centers. Δ



More tips and tricks for the kitchen

(This is a follow-up to Richard Blunt's article, *Tips and tricks for the kitchen*, which appeared in Issue #60, Nov/Dec. 1999.)

After years of watching my mother prepare thousands of wonderful foods in her small but efficient kitchen, I am convinced that a cook, to be successful, must apply a practical balance of imagination, love, and science to the craft. Most cooks, regardless of experience, are motivated by a love for food and consider their creations as works of art. Many, however, don't understand the basic science that determines how successful their creations will be. My mom was one cook who did.

To my eyes, nothing happened in her kitchen that wasn't supposed to happen. After reading a recipe, she knew how the finished food would look, taste, and smell. If she didn't like what she saw, she would change the formula to produce a food she liked. She also had a firm understanding of how to buy, use, and care for all of the basic tools that made her kitchen so successful. Her brand of kitchen science wasn't the variety that focused on the subtle difference between a five-carbon and a six-carbon sugar or the importance of the peptide bond in the formation of amino acids. Hers focused on matters like why baking powder leavens and how freezing ruins the texture of meat. She talked about things that some cooks never learn, like why it is important to crack a raw egg into a separate dish before adding it to a recipe. (Because the egg may be bloody or spoiled and ruin the ingredients you've broken it into.) This was basic information, but it was information that she felt "anyone calling themselves a cook should know."

Consistent with the size of her kitchen, my mom owned a carefully chosen mixture of kitchen tools. These tools were few in number but were purchased to perform a wide variety of tasks, take up a minimum amount of space, and last a lifetime. Her understanding of kitchen tools, how they worked, and the proper way to care for them was unique. Again, her knowledge focused on essential basics. She understood the difference between a high-carbon steel and a stainless steel knife, what type of pan is the fastest and most efficient conductor of heat, and how to test a pan for hot spots.

In this column I will discuss some of the most useful kitchen tools my mom used for many years, a few of which I still use today. I will give some important details about these tools. This information will help you purchase, use, and properly maintain them, so that you too will have them for a lifetime and beyond. I will also share some of mom's tips on other common items found in the kitchen.



Richard Blunt

In the recipe section you will find a few of the recipes my mom prepared only for the two of us. These recipes produce simple but elegant and satisfying foods that I am sure you will enjoy preparing and sharing with your own family.

Kitchen measurement

Here is a vital cooking tool that many cooks take for granted until confronted with a recipe that is designed to produce more or less than the number of portions desired. Adjusting recipes up or down by $\frac{1}{4}$, $\frac{1}{3}$, or $\frac{1}{2}$ is a frequent occurrence. Often a busy cook will estimate amounts rather than calculate them. Guessing can cause some serious problems with some recipes, especially when baking or making sauces. If one doesn't know that a tablespoon is equal to 3 teaspoons or $\frac{2}{3}$ of a cup is equal to 10 tablespoons plus 2 teaspoons, adjusting recipes can become a frustrating hit-or-miss nightmare.

To help you with this problem I have provided, on the following page, a list of measurements, a table of Equivalent Measurements, that my mom kept hanging on the refrigerator door. I've been over these numbers many times and have not yet been able to memorize them. So, just like my mom, I keep a copy stuck on the refrigerator. I also keep a copy in my wallet to use at work. Cut out this little table and put it in a conspicuous place in your kitchen. You will be surprised how often you will use it as a convenient reference.

The kitchen knife

One chilly fall day my mom was busy cutting a large piece of beef chuck into cubes for a stew. As usual, I was sitting at the kitchen table doing homework listening to her hum one of her favorite Kate Smith songs while she worked. Suddenly she stopped cutting and turned around.

My conditioned response to these sudden pauses was to stop what I was doing and listen.

"The most important tool in any kitchen," she said, "is a good quality knife with a sharp blade." Then she returned to her cutting. After she finished cutting the meat, she carefully washed her knife in warm soapy water, rinsed it, and set it aside while she cleared the meat from the counter. After washing and sanitizing her old wooden cutting board, she proceeded to prepare and dice four different vegetables with the same knife. She stopped only once to restore the razor edge of her knife by stroking it a couple of times on a butcher's steel.

The knife she was using was a 10-inch, heavy-gauge, high-carbon steel chef's knife. She used this knife to do most chopping and dicing. She owned three other carbon steel knives: a small paring knife with a 4-inch blade, a straight backed boning knife with a 6-inch blade, and a non-serrated slicing knife with a 12-inch blade. The latter three knives were used only to do specialized cutting. She bought these knives, on sale, in 1962, and they are still used in my kitchen today.

It is not possible to prepare food properly without a good set of sharp knives, even in our modern kitchens that have high tech equipment like the food processor. Working with knives that won't hold a sharp edge, or can't be properly sharpened after they become dull, is dangerous and inefficient. How can a dull knife be more dangerous than a sharp one? A cook using a very sharp knife to cut food will use

the same care as a barber using a straight razor to shave a man's face.

A cook using a dull knife is more inclined to use greater force when cutting, which increases the danger of the knife slipping. A dull

knife also crushes and tears instead of cutting, making food look unattractive and often not usable. Trying to slice a ripe tomato with a dull knife will illustrate this point.

Having said all of that, a few questions come to mind: What types of steel are used to make kitchen knives, and how do they differ?

Broadly speaking, steel is an alloy made from iron, carbon, and other metals such as chromium and nickel. Kitchen knives are most often made with three varieties of steel. For many years high-carbon steel, which is iron mixed with a high percentage of carbon, was the standard material of kitchen knives. Heavy-gauge knives made with this alloy were the first choice of all serious cooks. But a carbon steel knife is vulnerable to the acids in many foods. If the knife is not washed after contact with foods like citrus fruits, onions, and tomatoes the steel will chemically react with the acid causing the blade to develop ugly black stains and even rust. These reactions will transfer nasty tasting flavors to foods. Since few modern-day American cooks are willing to spend a lot of time caring for their knives, high-carbon steel knives are hard to find in this country. It's a shame because heavy-gauge, high-carbon steel is unequaled in its ability to hold a razor-sharp edge.

In 1912 steel manufacturers began adding measured amounts of chromium and nickel to the carbon steel formula, and stainless steel was born. By 1920 knives made from this carefree steel were on the market. Today stainless steel knives, made with a high percentage of carbon, are by far the most popular knives sold. However, for serious old-time cooks, like myself, these knives can seem to be frustratingly dull and slow cutting when compared to their older carbon steel cousins. This is because it is physically impossible to sharpen a stainless steel blade to the same degree as one made of high-carbon steel.

Kitchen knives are also manufactured with a steel alloy that I call ultra-stainless steel. This variety of stainless steel contains a high percentage of chromium, nickel, or other hard metal. Knives made with it are easily recognized by their brilliant chrome-like appearance and they are often sold through the infomercials on late night television. Manufacturers of these knives claim their product comes with a razor sharp edge and will never need sharpening. The



Table of Equivalent Measurements

| | | |
|----------------|---|---|
| 1 teaspoon | = | 1/3 tablespoon |
| 3 teaspoons | = | 1 tablespoon |
| 1/2 tablespoon | = | 1 1/2 teaspoons |
| 1 tablespoon | = | 3 teaspoons |
| 2 tablespoons | = | 1/8 cup |
| 3 tablespoons | = | 1 1/2 liquid ounces |
| 4 tablespoons | = | 1/4 cup |
| 8 tablespoons | = | 1/2 cup |
| 16 tablespoons | = | 1 cup |
| 1/8 cup | = | 2 tablespoons |
| 1/4 cup | = | 4 tablespoons |
| 1/3 cup | = | 5 tablespoons plus 1 teaspoon |
| 1/2 cup | = | 8 tablespoons |
| 2/3 cup | = | 10 tablespoons plus 2 teaspoons |
| 3/4 cup | = | 12 tablespoons |
| 1 cup | = | 16 tablespoons |
| 1 pint | = | 2 cups |
| 1 quart | = | 4 cups |
| 1 gallon | = | 4 quarts, 8 pints, 16 cups, 128, fluid ounces |

truth is that these knives will lose that razor edge over time, leaving you with a super hard steel blade that can't be sharpened without special machinery. I see lots of these knives thrown into obsolete tool boxes in commercial kitchens, waiting to be recycled.

What should you buy?

Quality manufacturers like Dexter, Henckels, and Wursthof make high-quality, heavy-gauge, high-carbon stainless steel knives that are carefree and hold an edge that will satisfy the needs of most cooks. I suggest that you buy top of the line, heavy-gauge knives from one of these manufacturers. A close look at one of these high quality knives will reveal some important features. The tang—that part of the knife enclosed in the handle—will run the full length of the handle and will be secured by at least three rivets. The handle should be made of hardwood or wood and plastic composite, be easy to grip, feel comfortable in your hand, and be in balance with the blade (i.e., the knife's center of gravity should be where the tang disappears into the handle).

The three knives that my mom gave me have all of these qualities and have survived over 30 years of hard kitchen use. With proper care and handling, I am confident that they will be in use for another 30 or 40 years.

How to keep your knives sharp

You need only three tools to keep your kitchen knives sharp and clean-cutting: a whetstone, a small bottle of honing oil, and a butcher's steel. A whetstone is a very hard block, usually made of a mixture of silicone and carbon called carborundum. It can be purchased at most hardware stores.

A butcher's steel is simply a hardened rough-faced iron bar with a wooden handle.

The whetstone is used to revive the cutting edge of a knife that has been worn away by repeated use. The butcher's steel is used to straighten the cutting edge of a knife that has been bent as the result of coming into contact with the hard surface of a cutting board during a chopping task. The following is important to remember, especially when using stainless steel knives: the cutting edge of a knife is very thin and the impact of this very thin edge on any surface will break it off or bend it. If a knife is good quality and is being used properly, three or four strokes on each side of the cutting edge using a butcher's steel will straighten the cutting edge.

Careful use and regular stroking on a butcher's steel, unfortunately, are not enough to keep that razor edge on even the highest quality knives when they are used frequently. Regular use simply wears the edge away and a whetstone is the best way to restore it. Using a whetstone properly takes a little practice but once the process is

understood, reestablishing the cutting edge on your knives will be a quick and easy task.

The proper way to hone a knife

The most important step in honing a knife is to establish the correct angle that the blade will be held to the stone and always maintain that angle during the honing process. My mom taught me that 25 degrees is best. This angle seems to produce a tough long-lasting edge on the blade. A honing angle less than this produces a very thin edge that will bend easily and wear away fast. Always apply a thin coat of honing oil to the stone before you begin sharpening. Honing oil is a refined mineral oil manufactured for use on sharpening stones and to lubricate machines that come in contact with food. If you can't find honing oil, use water. No other oils are suitable for use with a whetstone.

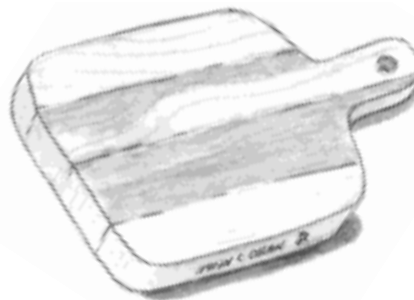
After coating the stone with oil or water, place the blade across the stone at the proper angle. Draw the blade toward you so that the whole blade passes over the stone, from handle to tip, in one motion. Turn the blade over, place it on the stone at the proper angle, and push it away from you so that the stroke covers the entire blade, from handle to tip. To develop a balanced cutting edge, it is important to make an equal number of strokes on each side of the blade. The first honing of a new blade will usually take some effort because the honing angle you are trying to establish may not be consistent with the one established by the manufacturer. Once you have established your custom edge, future sharpening will take very little effort—unless your knife has been damaged from misuse or become severely dulled as a result of neglect.

If you use oil on your whetstone, clean the stone after each use by wiping it with a clean cloth. Clean it under warm running water if you use water.

Cutting boards

Your beautifully honed knife is constantly being subjected to all sorts of damage every time it makes contact with a cutting surface such as a counter top, butcher block, or cutting board. The harder the cutting surface the quicker your knife will dull and the more likely the blade will suffer nicks. Hard surfaces like marble, metal, and china will do the most damage to a knife blade. At the other end of the spectrum is softwood, which is the most friendly surface for

a knife blade. A softwood cutting surface, however, contains a multitude of safety problems. Cuts and nicks created during normal knife use can cause wood chips to mix with your food. Also, softwoods easi-



ly absorb and retain moisture. This creates a perfect environment for bacteria to take residence deep enough under the surface to make it impossible to sanitize. When this happens, it is just a matter of time before someone becomes a victim of food poisoning.

In my opinion, there are only two materials that, with proper care, will subject your knife blade to the least amount of damage and minimize the development of food-poisoning bacteria: Hardwood and molded white polyethylene plastic cutting boards have durable surfaces that can be sanitized effectively.

Until plastic cutting boards hit the market, hardwood was the favored cutting surface in most professional and home kitchens. Since plastic is more resistant to moisture absorption than wood, conventional wisdom held that plastic boards were more sanitary than hardwood boards and less likely to support the growth of bacteria. A recent study done by two microbiologists at the University of Wisconsin's Food Research Institute, however, indicate that the opposite is true. Their tests showed that a hardwood surface is an inhospitable environment for food-borne bacteria. In fact, bacteria contained in poultry and meat juices disappeared from wood surfaces within minutes of contact. On the other hand, the same contaminants multiplied on plastic boards within minutes.

My mom used two hardwood cutting boards. One was used for foods that were to be cooked and the other for foods that were to be eaten raw, like salads. These boards were stored in separate areas in the kitchen and were never on the counter at the same time. After each use these boards were washed in hot soapy water and sanitized with a mixture of 2 cups of warm water and 3 tablespoons of chlorine bleach. If the boards picked up an odor from strong smelling foods, the odor was removed by rubbing the board with a paste made of baking soda and water.

After a period of use the surface of a plastic board becomes scarred from knife cuts. Bacteria can accumulate in these little nicks and resist all sanitizing efforts. When the hardwood board gets to this point, discard it and buy a new one. Well-maintained hardwood cutting boards are more resistant to staining and scarring because regular scrubbing helps the surface remain smooth and free from deep nicks.

Stove top utensils

Cooking on the stove top requires very specialized equipment. Sauce pots, skillets, stock pots, Dutch ovens, and sauté pans are the most frequently used utensils when cooking on top of the stove. When we are cooking with these pots and pans, an educated cook expects two basic performance qualities: the surface must conduct heat evenly so that hot spots don't develop (as pans that are not able to heat evenly will quickly burn food), and the surface of pots and pans should be chemically unreactive so that they will not change the taste or edibility of food.

Unfortunately, both of these qualities cannot be realized with any single material. Understanding how the materials that are used to make pots and pans will react during the cooking process will help you evaluate your present inventory of stove top utensils.

Utensils used on the stove top are exposed to direct contact with heat, and they heat the food they contain through a process called conduction. The efficiency by which the utensil's material transfers heat determines how a pot or pan will perform.

Metals are the most efficient direct contact heaters but are reactive with foods and can change their taste; ceramics are the least efficient but they are unreactive. Unfortunately, neither nature nor technology has been able to provide us with a single material that is an excellent conductor of heat, chemically unreactive to food, and affordable. This forces cooks to make informed compromises when buying stove top utensils.

Other than expensive metals (like gold and silver) tin, copper, and aluminum are the best heat movers in town. Middle of the road conductors include cast iron and carbon steel—which is used as a rolled sheet metal to fashion traditional woks and crepe pans. Stainless steel is the slowest and least efficient conductor of the metals.

The poorest conductors are glass, porcelain, earthenware, and pottery in general. A few years ago my mother gave me an enamelware pan. Enamelware was first introduced for use in the kitchen in the 19th century. It was made by fusing powdered glass onto the surface of cast iron. It was an early attempt to marry the nonreactive qualities of a porcelain material with the conductive efficiency of a metal. Stove top utensils made this way require careful handling. Quenching a hot enamelware pan in cold water will crack or shatter the coating. In my opinion this material is not suited for the extreme stress of kitchen use. My mom's gift makes a beautiful wall decoration in my kitchen.

Let's take a brief look at the properties of the most popular metals used to make pots and pans.

Tin

Tin is one of the few metals that can be found naturally in its metallic state. It is both nonreactive and an excellent heat conductor. However, it has two troublesome properties that limit its role in the manufacture of stove top utensils: it is a relatively soft metal that wears easily, and it has the very low melting point of 450 degrees. Since tin is not cheap, making heavy-gauge pots and pans from it would also be very expensive. In addition, the



often extreme temperatures experienced in stove top cooking, and the damaging effects of cleaning with abrasives, would literally wear the pot away in a short time.

Copper

Copper is also often mined in its natural metallic state. In the kitchen, its unmatched conductivity is its most attractive feature. It is also a very expensive metal for making heavy-gauge pots and pans. Copper has an oxide coating that is often powdery and porous, making it easy for copper ions to leach into foods. The human body has a very limited ability to excrete copper and ingestion of excessive amounts can cause gastrointestinal problems and possibly severe liver damage. If you are willing to pay the price, heavy-gauge copper pots are available with tin lining the inside surfaces. Eventually, due to the soft property of the tin, the pots and pans will have to be relined, a process that is nearly as expensive as their original price. One more problem with copper pots is that they must be kept clean, shiny, and untarnished in order to maintain their superior conductivity. This is often a monumental task. Copper has a high affinity to oxygen, and sulfur forms a greenish coating when exposed to the polluted air that is so common in our world. If you own a set of copper pots and pans, be prepared to spend a great deal of time polishing.

Aluminum

Aluminum is the most abundant metal found in the earth's crust. This makes it an economical metal for making heavy-gauge cookware. It also has low density making it much lighter than other metals manufactured to the same thickness. The heat flow efficiency of a thick-gauge aluminum pan is almost the same as that of a copper pan of the same gauge. Non-coated aluminum, however, has a bad habit of reacting to certain foods. For instance, the hydrogen sulfide developed while cooking eggs will cause an unprotected aluminum surface to develop a variety of aluminum oxide and hydroxide complexes. These complexes show themselves as grey or black stains on the surface of the pan and will often cause light colored foods to become noticeably stained. The same staining will also develop when cooking with hard water or high-alkali foods such as potatoes. High acid foods, like tomato sauce, will remove some of this stain and change the color of the sauce.

The surface atoms of all these common metals, with the exception of iron, undergo a spontaneous reaction when exposed to atmospheric oxygen. They form a very stable protective oxide film. This oxide film is both tough and nonreactive. Unfortunately, as aluminum



demonstrates, this film is extremely thin—only a few molecules thick—and can be easily scratched or worn away during the cooking process. Manufacturers of aluminum cookware have discovered a way to artificially create a thicker and more impervious version of this coating through a process called anodizing. Unlike electroplating, in which a metallic coating is applied to the surface of the metal, anodizing actually converts the surface of the existing metal making it an integral part of the aluminum and fairly impervious. You can purchase heavy-gauge anodized aluminum cookware, with or without an additional non-stick coating—usually Teflon or Silverstone. However, it has been my experience that even the best of these nonstick coatings eventually wears away. Hard-anodized cookware, without a nonstick coating, can be seasoned in the same way as cast iron. This will, in my opinion, extend the usefulness of the pan while giving you all of the nonreactive and efficient heat conduction benefits of coated aluminum. I recently purchased a hard anodized, 3-quart sauce pan. It was more expensive than its nonanodized cousin, but well worth the money.

Cast iron

Cast iron is a poorer heat conductor than aluminum or copper, and because of its high density it is also heavier. Also, iron is the exception to the rule that met-



als form a protective coating when they oxidize. Instead, in the presence of air and moisture, iron forms an orange complex of ferric oxide and water which is a loose powder, not a film. This powder does not protect the metal and, unless cast iron is properly seasoned, it will corrode continuously. Cast iron cookware does, however, offer some substantial benefits. When compared to aluminum or copper it is fairly inexpensive. It is also a safe metal to cook with because the human body can readily eliminate excess iron. Finally, because iron is much denser than aluminum, it will absorb heat more slowly and hold it longer. This characteristic is what makes cast iron cook at such a steady rate. I own several pieces of cast iron cookware. They are, and will remain, my most cherished stove top utensils.

Stainless steel

Stainless steel is made by adding chromium and sometimes nickel to iron. This is done to improve the mechanical properties of the metal. In this steel alloy, oxygen reacts with the chromium atoms at the surface to form a protective coat so the iron never gets a chance to rust. Stainless steel has one major problem: it is a very inefficient conductor of heat. A stainless steel pan will often have hot spots,

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even when the bottom is plated with aluminum or copper in an effort to even out the heat transfer. Aluminum coatings will also warp and separate from the stainless steel if accidentally subjected to excessive heat because the two metals expand differently when heated. Heavy-gauge stainless steel cookware is also very expensive. My personal experience has convinced me that its overall poor performance does not justify the price.

I hope this information will help you make the right choice if and when you decide to replace your existing stove top cookware. I will offer one last bit of advice: if your existing pots and pans are meeting all of your cooking needs, don't go looking for something better.

Other kitchen wares

Before we move on to the recipe section, here are some quick tips on other handy pieces of kitchen equipment.

Rice cookers: If you have trouble cooking rice and keeping it hot for any length of time, a rice cooker is for you. These handy cookers have the ability of cooking up to four cups of raw rice and keeping the cooked rice at serving temperature for up to four hours. Some models even come with a nonstick lining to make cleanup a breeze.

Pepper mills: Nothing compares with the taste of fresh ground pepper. If you don't have a pepper mill, and you are still using preground pepper to cook with or season food at the table, it's time for you to stop cheating your taste buds and buy a good pepper mill. Preground pepper loses flavor quickly, often while it is still sitting on the store shelf. If you have any preground pepper on the shelf that is more than three months old, throw it away. Then go out and buy a good pepper mill, preferably one with a crank handle. They're easier to use. Using fresh ground pepper will add new life to all of your recipes, and its wonderful flavor will lessen the need for salt at the table.

Here are two recipes my mom prepared when she was short on time, bored with other foods, or wanted to prepare a meal for later in the week and hold it in the refrigerator. A

reality for her was the fact that she had to devote 40 hours or more of her week to a job. On her days off she would often prepare foods that she felt would hold in the refrigerator without deteriorating in texture or appearance. The holiday stew and meat pie casserole presented here are examples of this type of recipe. As unique and elegant as these "time savers," as she called them, were she never shared them with others. They were reserved for her and me to enjoy. She even kept the recipes in a separate file.

My three children, Sarah, Jason, and Michael, serve as my in-house recipe-review committee. They are assigned the task of approving all recipes that I share with you in these pages, and they are usually very open-minded when evaluating new foods. I was, however, a little apprehensive about how they would feel about these time-saver recipes. As it turned out they thought both were great. On the night that I served the spicy New England stew, Sarah commented, "I wish I could take some of this to school when they serve that greasy, limp pizza for lunch."

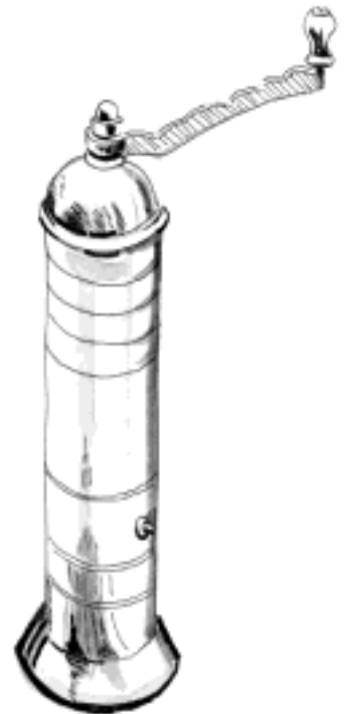
Try these two recipes in your kitchen. I am confident that you and your family will enjoy them.

Spicy New England holiday stew

Not being a real lover of turkey, my mom was always experimenting with different ways of preparing chicken, beef, and pork for the main meals on Thanksgiving and Christmas. On one occasion, knowing that she was scheduled to work on Christmas Day, she decided to prepare our holiday dinner the day before. She told me: "We're going to celebrate the holiday with a very special Pennsylvania-style stew that your Aunt B. taught me to make. With the stew, we're going to have some fresh baked challah bread (see my article on Festive Breads Nov./Dec. 1996) and apple pie with ice cream for dessert."

Who needs turkey with a meal like this?

The recipe contains ingredients that you don't usually associate with a stew, like cranberry sauce and horseradish. Fear not; these ingredients are well suited for this stew. Cranberry sauce is well known as a flavor enhancer, adding life to dull tasting foods like turkey. Here it combines its mild sweetness with the mellow, refined character of a young, fruity, dry red wine. It will add an exciting taste not common to most stews. The fierce, biting character of the horseradish is softened during the extended cooking process. The flavor that remains is mellow and nut-like.



Both of these ingredients also act as thickening agents, adding a wonderful texture to the finished stew. The original recipe called for yellow turnip (rutabaga). I have substituted white turnip because its flavor is more mellow and predictable than that of yellow turnip. So if you're looking for a new taste that will make your flavor sensors sit up and take notice, give this stew a try.

Ingredients:

4 lbs. stew beef, cut into one-inch pieces
vegetable oil to brown the meat
¼ cup onion, diced medium
1 carrot, diced medium
1 celery rib, diced medium
1 14 oz. can diced tomatoes, with the liquid
3 cups fresh or canned beef stock
3 cups red Zinfandel or other good young red wine of your choice
1 16 oz. can whole-berry cranberry sauce
1 cup grated horseradish, drained
1 cinnamon stick
8 whole cloves
5 whole black peppercorns
2 bay leaves
1 tsp. dried thyme
12 small white onions, peeled
4 medium carrots, peeled and cut into one-inch pieces (about 2½ cups)
3 cups white turnip cut into one-inch pieces
6 medium red skin potatoes, cut into quarters (this size potato is about two inches in diameter and weighs about three ounces)

Method:

1. Remove all excess moisture from the diced beef with paper towels (Wet meat will not brown).
2. In a heavy-bottom stock pot or a Dutch oven add two tablespoons of oil. Over medium-high heat add enough of the diced beef to cover the bottom of the pan. Brown the beef on all sides. Do this in several batches if necessary. Set browned beef aside.
3. Add another two tablespoons of oil to the pan and, over medium heat, sauté the diced onions, carrots, and celery until the vegetables are lightly browned.
4. Combine the tomatoes, beef stock, and wine. Add this mixture to the vegetables and bring it to a slow simmer.
5. Add the cranberry sauce, horseradish, and the spices and herbs to the simmering stock; increase the heat to medium-high, and return the browned beef to the pot. When the mixture returns to a slow simmer, reduce the heat low enough to maintain this simmer, and loosely cover the pot.
6. Cook the stew, at a slow simmer, until the meat is very tender, about 1½ hours.

7. While the stew is simmering, steam the remaining vegetables—the white onions, carrots, turnip, and potatoes—individually, until tender, and set them aside.

8. When the meat is tender, remove the stew from the heat and gently fold in the steamed vegetables. If you intend to serve the stew right away, return it to the heat and bring it to serving temperature. Otherwise, refrigerate it until you're ready to use it.

Old-fashioned meat pie casserole

This is my version of my mom's favorite "busy time" recipe. She would not, however, agree with me adding the word pie and renaming this recipe. She always called this a casserole because her definition of a pie did not include any combination of meat and vegetables. To her, the word pie meant a sweet dessert made with almost anything except a meat and vegetable combination. She also could not bring herself to put a flaky-type pie crust on anything but a pie. So, in an effort to make selected casseroles more interesting, she added a variety of baking powder-type breads as toppings. For this casserole she used a biscuit crust made with two types of flour. She also made another version of this recipe with a corn bread topping. Of course, her view on the most suitable crusts for this type of recipe is not new or unique. Talented cooks all over the world have successfully used a variety of yeast and baking powder crusts as toppings for meat and vegetable casseroles for many years. What makes this casserole stand out in my mind are the innumerable versions of the filling that my mom came up with. She made this casserole with every kind of meat that you can find in the supermarket and often mixed two of them together, like chicken and ham or beef and pork sausage. Watching her prepare recipes like this was always fun because she was usually formulating as she went. A unique feature of this casserole is her preparation method. She prepared this casserole in stages over a two or three-day period.

When this recipe was written stewing hens were an inexpensive stock item in our neighborhood meat market, so my mom always had a stewed chicken and some fresh stock on hand. All ingredients, except for the topping, are prepared, assembled, placed in the casserole dish a day ahead, and chilled in the refrigerator. On the day the casserole is served, the biscuit topping is prepared, rolled, and fitted on top of the chilled casserole. The casserole is then baked. When prepared this way, the bottom of the crust does not get soggy. The filling and the topping can also be assembled in small individual serving casseroles, baked, and frozen. These small casseroles can then be heated in a microwave or standard oven.

One more thing: The main theme in all of my mom's casserole pies is meat. The vegetables and the sauce are enhancing agents. You can add more vegetables and sauce

to suit your individual taste, but I suggest you first try this version. I think you will like it.

Ingredients:

- 1 4- to 5-pound roasting chicken or stewing hen
- 2 cups low fat, low salt canned chicken broth
- 1 medium carrot, diced medium
- 1 medium onion, diced medium
- 3 celery stalks, cut into 1/2-inch pieces
- 2 bay leaves
- 1 cup pale dry sherry or other dry white wine of your choice
- 5 Tbsp. butter or margarine, room temperature
- 5 Tbsp. all-purpose flour
- 1 1/4 cup frozen baby carrots, diced medium
- 1 1/4 cup frozen pearl onions
- 1 1/4 cup frozen sugar snap peas
- Kosher salt to taste
- fresh ground black pepper to taste

Topping ingredients:

- 1 1/2 cup all-purpose flour
- 1/2 cup cake flour
- 1 Tbsp. double acting baking powder
- 1 tsp. salt
- 1/4 cup shortening
- 3/4 cup whole milk

Method:

1. After carefully washing the chicken in cold water and removing the giblets, cut the chicken into quarters with a sharp knife.
2. Combine the chicken stock, fresh carrot, fresh onion, celery, bay leaves, wine, and quartered chicken in a heavy-bottom stock pot and stew the chicken over medium-low heat until the chicken is cooked completely, about one hour.
3. Remove the chicken from the stock and set it aside to cool.
4. Strain the stock and discard the vegetables and bay leaves.
5. Combine the softened butter or margarine with the flour and stir this mixture into a smooth paste.
6. Return the strained stock to the stove and bring it to a slow boil over medium heat.
7. Slowly stir the flour paste into the hot stock with a whisk to make a thickened sauce. Slowly cook this thickened sauce for about five minutes.
8. Add the frozen vegetables, salt and pepper to taste, and continue to cook the mixture for another five minutes. Remove the mixture from the heat and set it aside to cool.
9. Remove the chicken from the bones and cut the large pieces into one-inch chunks. Add the boneless chicken to the sauce, place the mixture into a 10 by 10 by 2-inch casserole. Cover the casserole and refrigerate overnight.

Biscuit topping:

1. Sift the two flours, baking powder, and salt together in a suitable size bowl.
2. Blend the shortening into the flour with a pastry blender, two knives, or your fingers until the mixture resembles grains of rice or smaller.
3. Using a heavy fork, stir the milk into the flour until all of the milk is incorporated and a slightly sticky dough is formed.
4. Turn the dough onto a floured surface and lightly turn the dough until the stickiness is gone. Add a little more flour to the working surface if necessary.
5. Preheat the oven to 450 degrees.
6. Lightly roll the dough to fit snugly on top of the casserole.
7. Remove the chilled casserole from the refrigerator and let it warm, at room temperature, for a few minutes.
8. Fit the biscuit topping onto the casserole and place it in the oven. Cook the casserole at 450 degrees for 15 minutes, then turn the oven down to 350 degrees. Continue to cook until the casserole reaches serving temperature, about 30 minutes. Δ

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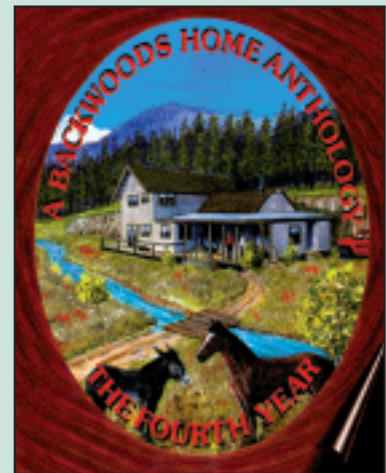
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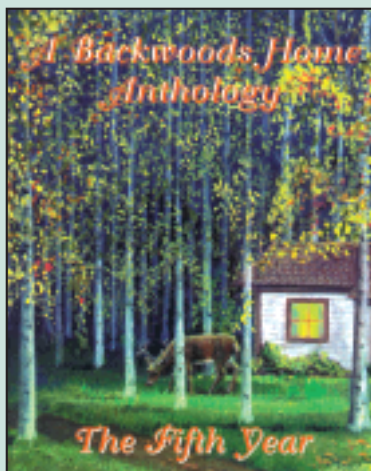
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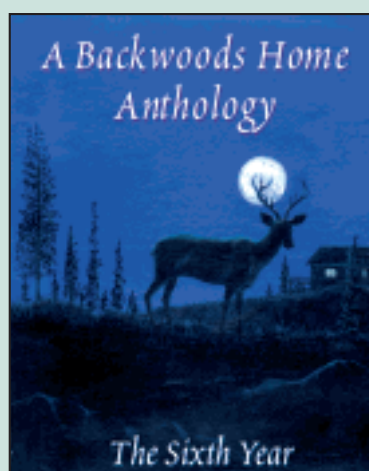
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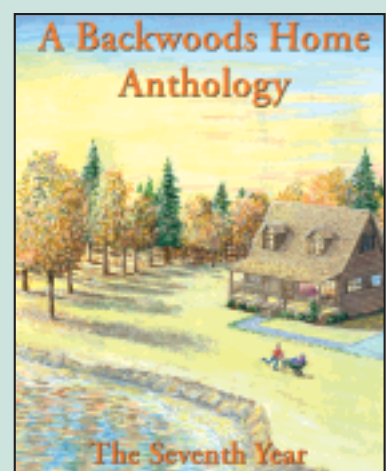
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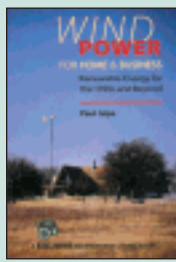


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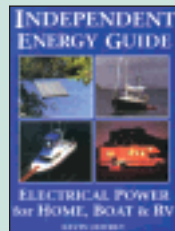


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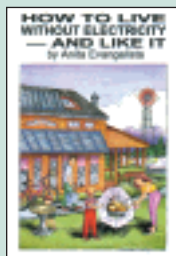


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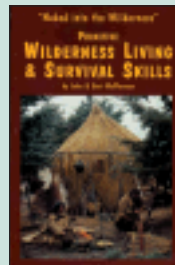


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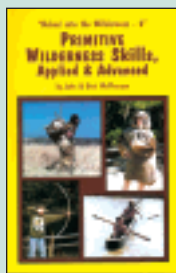


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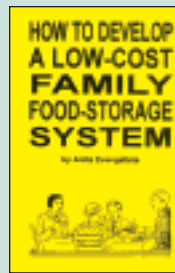


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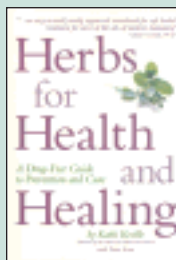


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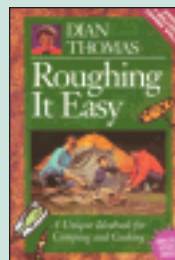


SS7

THE MAGIC AND MEDICINE OF PLANTS

A practical guide to the science, history, folklore, and everyday uses of medicinal plants. Learn to identify nearly 300 North American flowers and plants believed to have some therapeutic value. More than 700 color photos and illustrations. Fact-filled text.

464 pages; 6 3/4 x 11" hdbk. \$31.00



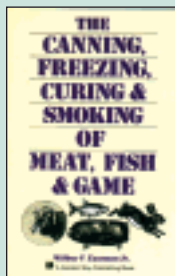
SS8

ROUGHING IT EASY

Dian Thomas, former co-host of the *Today Show*, presents her best-selling, all-in-one bible of camping and outdoor fun. This new enlarged and updated guide is filled with innovative hints for making camping and cooking safe, imaginative, and above all, enjoyable. Over one million copies sold. Read this book and hit the trail.

241 pages; 6" x 9" pbk. \$17.95

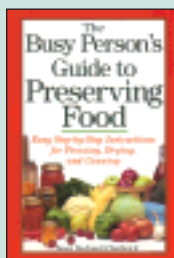
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FP1

THE CANNING, FREEZING, CURING & SMOKING OF MEAT, FISH & GAME

This new book describes the best ways of processing meat, fish, and game with emphasis on canning, freezing, curing, and smoking in the home, at the camp...anywhere. It contains everything you need to get started including sketches for building your own smokehouse. 202 pages; 5 3/8 x 8 3/8" ppbk. \$15.95



FP2

THE BUSY PERSON'S GUIDE TO PRESERVING FOOD

Step-by-step illustrated instructions for preserving fruits and vegetables: freezing, canning, cold storage, root cellaring, and drying. Includes recipes for meals, salsas, herbal vinegars, pestos, jellies, and teas. 212 pages; 6 x 9" ppbk. \$17.95



FP3

DAVE MILLER'S HOMEBREWING GUIDE

Miller provides brewers with his two decades of know-how to ensure that they make great-tasting beer or ale every time. Explains equipment of the 90's, recipe formulation, and troubleshooting. Includes 33 recipes. 358 pages; 6 x 9" ppbk. \$19.95



FP4

ROOT CELLARING

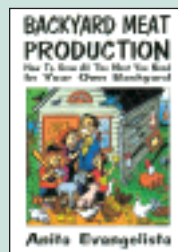
This book tells you how to use root cellaring as a means of natural storage. It is the first book devoted entirely to the subject and covers it thoroughly. It explains the vegetable and fruit varieties that store best, how to use root cellars in the country and the city, how to build your own root cellar, and more. 298 pages; 6 x 9" ppbk. \$17.95



FP5

BASIC BUTCHERING OF LIVESTOCK & GAME

This book is for anyone who hunts, farms, or buys large quantities of meat. The author takes the mystery out of slaughtering and butchering everything from beef and veal, to venison, pork, and lamb. The text is easy-to-follow and there are 130 detailed illustrations to assist in the complete step-by-step instructions. 194 pages; 6 x 9" ppbk. \$17.95



FP6

BACKYARD MEAT PRODUCTION

With the helpful instructions in this book, you can easily meet your family's animal-protein needs for a fraction of the amount you currently spend, while maintaining a higher standard of quality control over feeding and butchering that will ensure healthier meat for you and your loved ones. 132 pages; 5 1/2 x 8 1/2" ppbk. \$17.95



FP7

COLD CLIMATE GARDENING

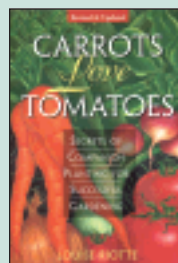
Provides invaluable information to northern gardeners that shows how to grow food, landscape, protect vulnerable plantings, warm up the soil earlier, and just which species are appropriate to your area. This book is useful for those who garden in microclimates like valleys or hillsides or those who just want to extend their growing season in any climate. 308 pages; 6 x 9" ppbk. \$19.95



FP8

DIRT CHEAP GARDENING

This book contains tips, tricks, and hints that show you hundreds of ways to save money in your garden including how to reuse and recycle; identify and acquire useful tools; use low-cost ways to ensure healthy plants; buy, save, and start seeds; obtain plants cheap—or free; and even which plant varieties save money. 166 pages; 6 x 9" ppbk. \$12.95



FP9

CARROTS LOVE TOMATOES

This is more than just carrots and tomatoes, it is a book about companion planting. It shows the gardener how to use plants' natural partnerships to produce bigger and better harvests, how to avoid putting together those that work against each other and even plants that promote natural pest control. 220 pages; 6 x 8 7/8" ppbk. \$17.95



FP10

SEED SOWING AND SAVING

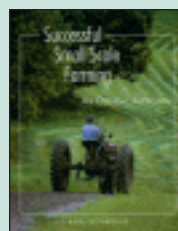
Here's all the information and guidance you'll need to start saving seeds from your favorite vegetables, herbs, and flowers for planting. Dozens of charts and over 300 step-by-step illustrations show you how to determine when seeds are ready for harvest and how to collect and store them. 218 pages; 8 1/2 x 11" ppbk. \$22.95



FP11

SELF-SUFFICIENCY GARDENING

This 128-page book is subtitled "Financial, Physical and Emotional Security from Your Own Backyard." It's a practical guide for increasing your self sufficiency by growing vegetables, fruits, nuts, herbs, medicines, and other useful products. 128 pages; 8 1/2 x 11" ppbk. \$16.95



FP12

SUCCESSFUL SMALL-SCALE FARMING

This classic guide to organic small-scale farming—fully updated for the 1990s—covers a wide range of topics, including soil improvement, machinery, best cash crops, marketing, and essential skills. It shows that small-scale farms can be cleaner, smarter and more efficient than agribusiness. 134 pages; 8 1/2 x 11" ppbk. \$15.95



FP13

A GUIDE TO RAISING CHICKENS

This informative book is for both the beginning and experienced chicken owner and covers selecting a breed that will suit you and your environment, taking care of chicks, eggs for eating, raising broilers, feeding your flock, and troubleshooting the problems that are bound to occur. 341 pages; 6 x 9" ppbk. \$21.95



FP14

A GUIDE TO RAISING PIGS

This book offers small-scale farmers and 4-H or FFA youngsters clear, illustrated information about every aspect of pig raising. Included are choosing the right breeds, feeding and housing, health maintenance and disease prevention, butchering and pork processing, showing, and raising pigs as a business. 314 pages, 6 x 9" ppbk. \$21.95



FP15

RAISING SHEEP THE MODERN WAY

Here's the small-scale sheep raiser's bible and it is newly revised to reflect the changes occurring in the industry over the last 13 years. It includes new theories about breeding, pregnancy management and the handling of lambs, new medications and vaccines, and a whole new chapter on guard dogs. 278 pages, 6 x 9" ppbk. \$15.95

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FP16

CHEESEMAKING MADE EASY

How to make 60 varieties of cheese at home and includes what equipment is required as well as how to prepare a starter culture, use rennet, control temperature, and color. It has an easy-to-follow format, photos, & illustrations.

136 pages; 8 3/8 x 7 1/4" ppbk. \$17.95



FP17

RAISING RABBITS THE MODERN WAY

This is the completely revised Garden Way Publishing classic on raising rabbits. It contains the most recent how-to information for successfully raising rabbits on a small to semicommercial scale including feeding, housing, medication, breeding, showing, and selling.

179 pages; 6 x 9" ppbk. \$15.95

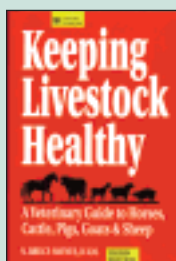


FP18

RAISING MILK GOATS THE MODERN WAY

This newly revised edition contains up-to-the-minute information on diseases and medication, new breeds, new barn plans, and how to maximize the quality and quantity of milk your goats produce. It also provides clear, practical instructions for breeding, kidding, feeding, milking, housing, and other basics.

200 pages; 6 x 9" ppbk. \$15.95

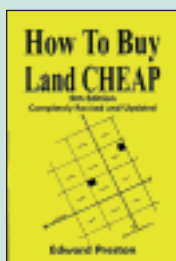


FP19

KEEPING LIVESTOCK HEALTHY

This newly updated edition has the latest information on the technologies and diseases that livestock owners need to know including developments in vaccines, artificial insemination, drug treatments and new information on diseases such as Lyme disease, Potomac fever, & BSE.

344 pages; 6 x 9" ppbk. \$22.95



BU1

HOW TO BUY LAND CHEAP

Now in its Fifth Edition, this is the bible of bargain-basement guides for cheap land and houses. It's been used to buy building lots, lakefront property, and commercial land all over the United States and Canada, including land from drug seizures and S&L closings.

130 pages; 5 1/2 x 8 1/2" ppbk. \$17.95



BU2

HOW TO BUILD YOUR OWN LOG HOME FOR LESS THAN \$15,000

The author built a 4300-square-foot log home for a fraction of the cost of conventional construction. This book covers site selection, planning, tools, techniques, the foundation, raising the walls, roofing, wiring, plumbing, stairs, windows, doors, and much more.

218 pages; 8 1/2 x 11" ppbk. \$22.95



BU3

BE YOUR OWN HOUSE CONTRACTOR

Details the steps that go into building a house, from selecting land and getting it financed to developing plans and schedules, selecting subcontractors, negotiating contracts, and buying materials and supplies. The author is a construction loan consultant, former home builder, and the founder of two schools of home building.

138 pages; 6 x 9" ppbk. \$17.95

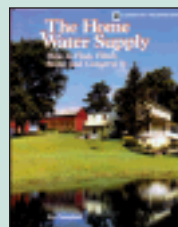


BU4

BUILDING SMALL BARNs, SHEDs & SHELTERS

Extend your working, living, and storage areas with these basic, easy-to-follow construction methods for multi-purpose barns, sheds, garages, root cellars, smokehouses, and much more. Everything from the tools and materials you need to finishing details are included.

237 pages; 8 1/2 x 11" ppbk. \$19.95



BU5

THE HOME WATER SUPPLY

Concrete and money-saving answers to the questions of how to locate, move, and purify water. This book includes instructions for constructing ponds and how to hook up the plumbing in your home. Reading this you'll know when to try something yourself and when to call a plumber or other expert.

236 pages; 8 1/2 x 11" ppbk. \$21.95



BU6

NEW COMPACT HOUSE DESIGNS

Here are the 27 best designs from a competition for single-family houses. Each house has a minimum of two bedrooms but none is more than 1250 square feet. There are drawings, plans, and judges' comments along with addresses of the architects and designers for those interested in scale plans or more information.

188 pages; 8 1/2 x 11" ppbk. \$22.95



BU7

WIRING SIMPLIFIED

This is the 39th edition of Wiring Simplified, and it's based on the 1999 National Electrical Code. The book is organized into four parts: Getting started—the basics; Wires, circuits, and grounding; Installing service equipment and wiring; and Special wiring situations and projects. New topics include emergency back-up generators and low-voltage wiring.

226 pages; 5 1/2 x 8 1/2" ppbk. \$12.95

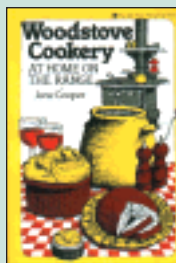


CR1

COOKIN' WITH HOME STORAGE

Vicki Tate and Peggy Layton reunite in this newly released version of the best book there is on cooking from home stored foods. These Mormon women have years of experience and expertise behind them, and in this excellent book they will show you how to incorporate your stored foods into your everyday life.

302 pages; 5 1/2 x 8 1/2" ppbk. \$19.95



CR2

WOODSTOVE COOKERY

This book will tell you how to buy a wood stove—new or used, how to set it up, fuel it, clean it, and keep it in peak operating condition. But most importantly it will show you how to cook on it. There are dozens of recipes including breads, stews, roasts, soups, desserts and more. There's even food preservation. A must for the self-reliant.

196 pages; 6 x 9" ppbk. \$15.95



CR3

HEAVEN'S FLAME

This book provides detailed plans to build a very hot and efficient solar cooker from the barest of materials. The solar cooker can then be used to cook anything from snacks to full meals. Included is an explanation of how solar cookers work and accounts of how they are being accepted and used around the world to produce good cooked meals from sunlight.

145 pages; 5 1/2 x 8 1/2" ppbk. \$18.00



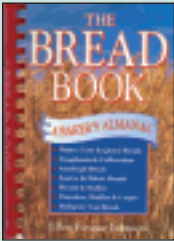
CR4

THE MORNING HILL COOKBOOK

For years, Backwoods Home Magazine readers have enjoyed Jennifer Stein Barker's wonderful vegetarian recipes in the pages of Backwoods Home Magazine. Now here is an entire book (182 pages) of her wholesome, delicious recipes.

182 pages; 6 x 9" comb bnd. \$14.95

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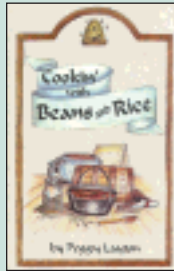


CR5

THE BREAD BOOK

This book is a month-by-month almanac that offers 140 bread recipes from around the world. It is well illustrated with line and photographs and it contains time-saving tips and advice for the beginning baker.

230 pages; 6 x 9" comb bnd. \$19.95



CR6

COOKIN' WITH BEANS AND RICE

This book is packed with fun-filled recipes that combine beans and rice, as well as other foods. Peggy Layton is a home economist who has written several books on food storage. With 7 children to feed, she cooks from bulk food storage on a regular basis, and this book reflects her extensive experience.

156 pages; 5 3/8 x 8 1/4" ppbk. \$14.95



CR7

COUNTRY BEANS

Soups, sauces, and gravies in 3 minutes! 400 heart-healthy, cholesterol-free bean and grain recipes using wholesome storage foods. Learn how to make "user friendly" beans and cheap meals in 30 minutes or less. Low fat or no-fat bean soups, dips, sauces, and gravies from bean flours in only minutes.

196 pages; 6 x 8 1/4" ppbk. \$17.95



CR8

15 MINUTE STORAGE MEALS

Offers quick, healthful recipes that utilize the "fabulous 30" foods of high energy, which are rich in complex carbohydrates. These are high octane foods that will be valuable in an emergency. Illustrates the basic necessities and gives recipes for them. Contains a guide for things to store in your pantry.

133 pages; 5 1/2 x 8 1/2" ppbk. \$15.95



TH1

GUERRILLA CAPITALISM

Don't fork over all your hard-earned cash to the IRS! Beat the system and do business tax-free. This book shows you how to join the growing underground economy, how the barter economy works, how to run a business off the books, how to stay clear of the IRS, and how to practice free enterprise in an unfree economy.

172 pages; 5 1/2 x 8 1/2" ppbk. \$17.95



TH2

JURY NULLIFICATION

Our Founding Fathers ordained that jurors had the right to vote "not guilty" if a law is unjust or unjustly applied. This allows us to hold the government to the principles of the Constitution and prevent oppression. But American courts now systematically deny us this right. Read this book and realize your real power as a juror.

311 pages; 6 x 9" ppbk. \$25.50



TH3

THE LIBERTARIAN READER

A comprehensive anthology of libertarian thought with readings from the Bible, our Founding Fathers, philosophers, economists, and others explaining why the individual and personal freedom are more important than collectivism and the state. Here is the sensible alternative to the Democrat/Republican monopoly.

458 pages; 6" x 9" ppbk. \$20.95



TH4

A NEW DEAL FOR SOCIAL SECURITY

For more than 60 years, Social Security has been the most important source of income for senior citizens. Now facing severe crisis, this book examines the history of Social Security and argues that unless it is restructured and privatized, the baby boom generation, after contributing for a lifetime, will be left out the cold.

262 pages; 6 X 9" ppbk. \$13.95



TH5

LIBERTARIANISM: A PRIMER

This book traces the history of libertarian thought and provides a concise yet thorough treatment of the subject. The writer discusses why libertarianism is morally just, efficient, and practical, and how it would affect public policy in America by leaving decisions in the hands of the individual, creating a freer and more efficient society.

314 pages; 6 x 8 1/2" hdbk. \$26.00

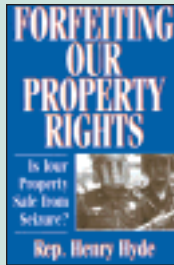


TH6

SCHOOL CHOICE

This book explains why public schools no longer work, why the NEA resists the reform that would save education, and how and why it mounted one of the costliest political campaigns in American history to stop reform in California. Included is the compelling argument that shows why free choice in education is the one reform that will work.

203 pages; 5 7/8 x 9" ppbk. \$15.95

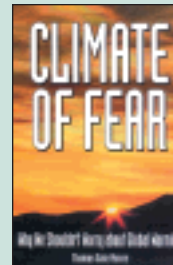


TH7

FORFEITING OUR PROPERTY RIGHTS

The government can take your home, your car, and your money without warning and never charge you with a crime—and the burden of recovery is on you! This book examines the abuse inherent in civil forfeiture, the law that lets government take property that is merely suspected of having "facilitated" crime.

100 pages; 6 x 9 1/2" hdbk. \$19.95

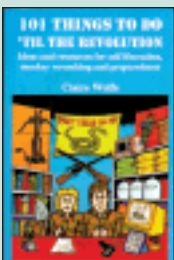


TH8

CLIMATE OF FEAR

Many climatologists believe that industrial emissions of carbon dioxide are leading to an increase in global temperatures. Economist Thomas Gale Moore asks, "So what?" His book argues that, based on both historical and economic analyses, a warmer climate would be, on balance, beneficial to both mankind and the environment.

177 pages; 5 7/8 x 8 7/8" ppbk. \$12.95



MS1

101 THINGS TO DO 'TIL THE REVOLUTION

For the concerned citizen who wishes to keep a low profile, protect his or her rights, and survive in the "interesting times" which are sure to come, this book is essential reading. Wolfe lists the supplies you should be laying in and activities you should be engaging in before stuff starts spraying off the fan. She also lists some interesting web sites you should look into.

200 pages; 5 3/8 x 8 3/8" ppbk. \$18.95

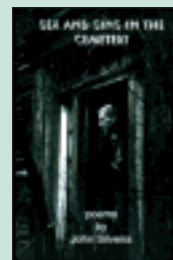


MS2

IN THE GRAVEST EXTREME

This is everything you should know before you consider acquiring a gun for self defense. Covers technical, tactical, and legal issues. Author Massad Ayoob, a police officer of many years' experience, is a nationally respected authority on firearms.

132 pages; 5 3/8 x 8 1/4" ppbk. \$12.95



MS3

SEX AND SINS IN THE CEMETERY

This book contains over 70 of John Silveira's poems about love, work, and death...poems so stark and accessible, you will discover that he is revealing things about you as well as himself. Warning: Some of the poems are explicit and couldn't be published in BHM.

104 pages; 5 3/8 x 8 3/8" ppbk. \$8.95



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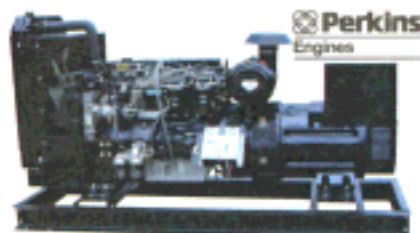


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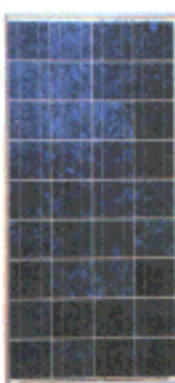


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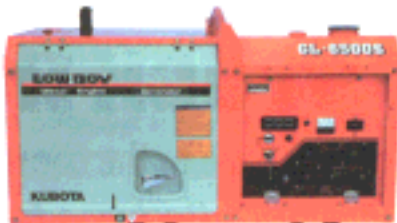
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Working with your woodlot

By Robbo Holleran

Many rural homes have a back forty that's treed. To some, the forest is a liability because we need the land for pasture or crops. Food should be a priority, but don't overlook the forest for the trees. Those trees can be a tremendous asset and can be tended and grown like a garden to provide firewood and lumber for your own use or sale, wildlife habitat to benefit preferred species, recreational habitat for us humans, privacy, and the scenic backdrop we enjoy.

How trees grow

Trees use sunlight to make sugar from water and CO₂. Sugar is tree money. They burn most of the sugar to live, grow leaves and shoots, and do their "business" like the rest of us. They save some sugar for next year's



Professional help should be found for harvesting mature trees. There are two valuable butts involved: yours and the "butt log." One is much more valuable than the other.

energy as starch. The extra sugar gets twisted into cellulose and other elements of wood for diameter growth of the tree's stem. So the thickness of the summer's growth ring is most proportional to the amount of extra sunlight the tree got, not rainfall.

Most natural forests are too crowded, and crowded forests show slow growth. Rainfall or drought will only be significant for the drought stressed trees on rocky knobs or in the driest parts of the country. Competition with other trees for sunlight on the green crown will be the most important factor for growth. This changes over a tree's life, showing a growth pattern in the rings.

Most forests will grow almost a cord of wood every year, per acre. If the forest is old or crowded, then decay and mortality will be about the same as growth. In a crowded forest the growth is spread out over many trees growing slowly, and all the trees are unhealthy. If a forest is properly thinned, the best trees all have plenty of sunlight, some room to spread their branches, and will grow rapidly.

The "ideal" trees to grow have several attributes:

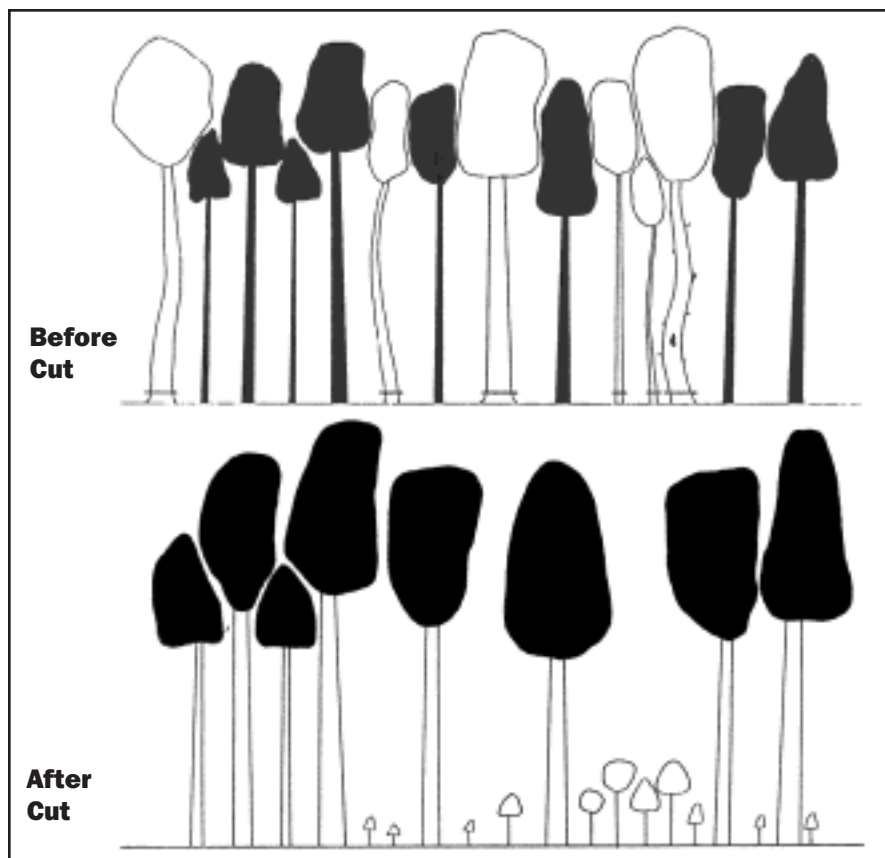
- The species are well suited to the soil and site and have good value potential or usefulness.
- The stems are straight, with no major defects such as rotten branches.
- The green part of the crown is large or medium sized compared to the other trees.
- The tree is overall in good health and not overmature.

The ideal trees also meet your objectives for the site. For example, if you maintain an area for firewood production close to the house with easy access, then you would prefer to grow hardwoods there. If you are growing

trees for eventual sale, then the valuable species for your area should be a preference. Some species have specific wildlife benefits like acorns from oak trees. All these things are taken into account to select the best trees to grow in a given area.



A well thinned pine forest is attractive, healthy, and good for wildlife. Remaining trees will grow more than twice as fast.



In a middle aged stand, some of the best and some of the worst trees can be removed (white crowns, above) for a good thinning, leaving good quality trees of valuable species with room to grow (dark crowns, above). After a cycle of growth, the forest looks like the lower drawing.

Mapping your trees

Mapping the forest is a good place to start. The best tools are an accurate survey of your land and aerial photos at the same scale. These may be available from your state forester, Agricultural Extension Service, or town office. If not, the back of an old envelope will do. Roughly map your property by natural divisions—streams, ridges, or other features—and then notice the changes in the forest. Changes in the species are most obvious, then changes in the diameter or height of the trees (e.g. one area with small trees, one with large trees, another area of all mixed sizes). This is useful to determine what the goals can be for each area. Younger areas can be maintained for a long time as the trees grow. Mature

forests can also be thinned, but it may be time to start a new forest, if only in patches. Some areas may have specific value to you as wildlife habitat or recreational use. These things will be important to how you treat each area.

Each area should have a specific goal or desired future condition. For example: grow acorns for deer and turkeys, grow valuable lumber for retirement income, harvest lumber to build a barn, or maintain it scenic for a picnic spot.

Harvesting

Harvesting is the basic tool we use to change the forest. I realize that I have a “products approach” to forests, and forests are so much more than products. The other tools include fire, herbicides, wind or ice storms, and time (allowing trees to grow or die to change the forest). You can see that harvesting is the only one that pays for itself and is easier to control than the others.

Since trees grow and the forest is probably too crowded, often we can select the portion of the trees we want to grow for some future benefit and the portion of the trees we want to



Harvesting firewood by removing low quality trees with a small tractor is within reach of many of us.

harvest for some present benefit. For example, a mature area of softwoods might be harvested to build the barn, or it might be left as a scenic area, or left for future harvest.

A younger mixed forest could be thinned to favor either hardwoods or softwoods depending on the site, relative values, or landowner preferences. Mature oaks can be left alone or thinned to improve acorns and future lumber, or harvested for lumber. Different owners will make their own decisions. Understanding the biology and economics is the science. Weighing the present and future benefits is the art.

Often the best trees to grow for future use are also the best trees to use or sell today. How do we reconcile that? The first decision is whether the forest is mature. If the trees are young and healthy, then they can be grown for awhile (10 to 100 years or more). Most of the best trees should be left to grow. A few of the good ones can be harvested, but many of the poorer trees should be cut. Are they useful for firewood or logs? Are they profitable to harvest and handle? Would harvesting them help you meet your goal for additional growth? Thinning and weeding will provide firewood or fence post-sized trees, yet leave the very best trees for the future.

Middle-aged forests can still be thinned if there is enough good quality potential to grow. Thinning here will provide firewood and perhaps logs for sale or home use.

On the other hand, perhaps the forest is mature. This means either that most of the trees are old or declining in health, or that the trees have met your goal for some products. Trees don't last forever, and like vegetables they have an ideal time to be "picked." However, the opportunity to pick may span 10 years instead of two days.

If you are building a house from trees on your land, don't scrimp and use rotted, crooked, or poor quality trees. Certain species and sizes will be the best ones for each job. Cut them.

Hopefully, you'll only build one house. But understand that if you cut enough of the best trees from a given stand, it will be time to start a new forest there. Even if you have left some trees, crooked or junk trees might not be healthy enough to make a suitable forest. Harvesting a mature forest will usually provide the most valuable logs and make the biggest mess. Of course, there is always enough firewood from tops, branches, and rotten or crooked trees. Sometimes, natural regrowth can be controlled to be adequate, but planting seedlings might be needed.

Wasting wood seems like a shame. One of the things we don't like about commercial harvesting is the mess: tops, branches, and cull logs left on the ground. We think: "Look at all that firewood." Usually, if these pieces could be sold for near their handling cost, they would be gone. Left behind, they rot and replenish the soil and provide ugly habitat for fungi and wildlife.

Very "clean" harvesting, where all the debris is hauled out can have other problems. It is pretty, but can deplete the soil nutrients. Is pretty better? I usually encourage people to get their firewood from poorer quality trees that are still alive. Leave the tops to decay and the dead ones for wildlife. Get into the crowded portions of your woods and cut the trees that crowd the best ones for future growth.

I once saw a landowner cut two beautiful oak trees from the edge of his woods for two cords of firewood. He used every stick. It was great dense wood, split easily (straight perfect logs), and he could pick up the pieces with his garden tractor. I explained that the four premium logs were worth about \$500, and he could have had five cords cut, split, and delivered to his driveway in exchange. He still would have a cord from the tops and branches to pick up. The moral of the story is that wasting wood is a relative term, compared to wasting value. Also, growing a forest of valuable trees can be profitable.

Your forest a garden

Treat your forest like a garden. Trees, unlike tomatoes, take decades to grow but respond to the same care of planting, weeding, thinning, or harvesting. Go carefully, but remember that forests are resilient. They have survived centuries of storms, fires, diseases, and farming or harvesting influences.

Currently, more wood is growing than being harvested in every region of the country. Wood is the best natural resource, environmentally, requiring less energy and making less pollution in processing. It is completely renewable, recyclable, and biodegradable. Also, by providing our wood products close to home in sustainable ways we reduce imports from places like Brazil and Siberia, where environmental protection is not the norm. Here, where we enjoy land ownership, we take the best care of it.

(Robbo Holleran is a private consulting forester serving landowners in southern Vermont and adjacent areas. He and his wife homeschool their five kids, all born at home. They have a home office, a big garden, and a herd of New Zealand rabbits.) Δ

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THE IRREVERENT JOKE PAGE

(Believing it is important for people to be able to laugh at themselves, this is a continuing feature in *Backwoods Home Magazine*. We invite readers to submit any jokes you'd like to share to *BHM*, P.O. Box 712, Gold Beach, OR 97444. There is no payment for jokes used.)

The Pope met with his Cardinals to discuss a proposal from Benjamin Netanyahu, the leader of Israel. "Your Holiness," said one of his Cardinals, Mr. Netanyahu wants to challenge you to a game of golf to show the friendship and ecumenical spirit shared by the Jewish and Catholic faiths."

The Pope thought this was a good idea, but he had never held a golf club in his hand. "Don't we have a Cardinal to represent me?" he asked. "None that plays very well," a Cardinal replied. "But," he added, "there is a man named Jack Nicklaus, an American golfer who is a devout Catholic. We can offer to make him a Cardinal, then ask him to play Mr. Netanyahu as your personal representative. In addition to showing our spirit of cooperation, we'll also win the match."

Everyone agreed it was a good idea. The call was made. Of course, Nicklaus was honored and agreed to play. The day after the match, Nicklaus reported to the Vatican to inform the Pope of the result. "I have some good news and some bad news, your Holiness," said the golfer. "Tell me the good news first, Cardinal Nicklaus," said the Pope.

"Well, your Holiness, I don't like to brag, but even though I've played some pretty terrific rounds of golf in my life, this was the best I have ever played, by far. I must've been inspired from above. My drives were long and true, my irons were accurate and purposeful, and my putting was perfect. With all due respect, my play was truly miraculous.

"There's bad news?" the Pope asked.

"Yes," Nicklaus sighed. "I lost to Rabbi Tiger Woods by three strokes."

Six Presidents were on a sinking boat.
Ford says, "What do we do?"
Bush says, "Man the life boats!"
Reagan says, "What life boats?"
Carter says, "Women first..."
Nixon says, "Screw the women!"
Clinton says, "You think we have time?"

Father Murphy walked into a pub in Donegal, and said to the first man he meets, "Do you want to go to heaven?"

The man said, "I do Father."

The priest said, "Then leave this pub right now!" and approached a second man. "Do you want to go to heaven?"

"Certainly, Father," was the man's reply.

"Then leave this den of Satan," said the priest, as he walked up to O'Toole. "Do you want to go to heaven?"

"No, I don't Father," O'Toole replied.

The priest looked him right in the eye, and said, "You mean to tell me that when you die you don't want to go to heaven?"

O'Toole smiled, "Oh, when I die, yes, Father. I thought you were getting a group together to go right now."

Words of wisdom:

Give a man a fish and he will eat for a day. Teach him how to fish, and he will sit in a boat and drink beer all day.

Money can't buy happiness, but it makes misery easier to live with.

Nothing in the universe travels faster than a bad check.

A clear conscience is usually a sign of a bad memory.

If you must choose between two evils, pick the one you've never tried before.

A cynic smells flowers and looks for the casket.

Dog jokes

"My dog is worried about the economy because Alpo is up to 99 cents a can. That's almost \$7.00 in dog money." - Joe Weinstein

"In order to keep a true perspective of one's importance, everyone should have a dog that will worship him and a cat that will ignore him." Dereke Bruce

"When a man's best friend is his dog, that dog has a problem." - Edward Abbey

Some days you're the dog; some days you're the hydrant.

"Outside of a dog, a book is probably man's best friend; inside of a dog, it's too dark to read." - Groucho Marx

The Vermont farmer and his wife were shown into the dentist's office where he made it clear he was in a big hurry.

"No fancy stuff, Doctor," he ordered. No gas, no needles, or any of that stuff. Just pull the tooth and get it over with."

"I wish more of my patients were as stoic as you," said the dentist admiringly. "Now, which tooth is it?"

The farmer turned to his wife and said, "Show him, Becky."

A minister was asked to dinner by one of his parishioners, who he knew was an unkempt housekeeper. When he sat down at the table, he noticed that the dishes were the dirtiest that he had ever seen in his life.

"Were these dishes ever washed?" he asked his hostess, running his fingers over the grit and grime.

She replied, "They're as clean as soap and water can get them."

He felt a bit apprehensive, but blessed the food anyway and started eating.

It was really delicious and he said so, despite the dirty dishes.

When dinner was over, the hostess took the dishes outside and yelled, "Here, Soap! Here, Water!"

A professor at the University of Kentucky is giving a lecture on the supernatural. To get a feel for his audience, he asks: "How many people here believe in ghosts?" About 90 students raise their hands.

"Well that's a good start. Out of those of you who believe in ghosts, do any of you think you've ever seen a ghost?" About 40 students raise their hands.

"That's really good. I'm really glad you take this seriously. Has anyone here ever talked to a ghost?" 15 students raise their hands.

"That's a great response. Has anyone here ever touched a ghost?" 3 students raise their hands.

"That's fantastic. But let me ask you one question further...Have any of you ever made love to a ghost?" One student way in the back raises his hand.

The professor is astonished. He takes off his glasses, takes a step back, and says, "Son, all the years I've been giving this lecture, no one has ever claimed to have slept with a ghost. You've got to come up here and tell us about your experience."

The redneck student replies with a nod and a grin, and begins to make his way up to the podium. As he ambles slowly toward the podium the professor says, "Well, tell us what it's like to have sex with a ghost."

The student replies, "Ghost? Shiiiiit..... From way back there I thought you said 'goats.'"

What did Helen Keller say when she found the cheese grater?

It was the most violent book she'd ever read.

I keep seeing these homeless people by the side of the road with signs, "Will work for food." Isn't that what we're all doing?

**HELP STAMP OUT, DELETE, & ERADICATE
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BHM Reader's Survey

Want to help shape the future of Backwoods Home Magazine? Take a few moments to fill out this survey, then drop it in the mail to us. Our address: Backwoods Home Magazine, PO Box 712, Gold Beach, OR 97444

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Comments

Please use this area for comments, criticisms, suggestions, and anything else you may want to tell us that was not covered in the questions above.

Basic livestock vetting

By Marcella Shaffer

For a moment, think about these scenarios: It is late afternoon and you notice your horse has stepped on a rusty nail. You call the animal clinic and are told that the veterinarian is just leaving on an emergency call and won't be available until the next day. You are also instructed that you should come by the clinic and pick up a tetanus antitoxin injection and administer it intramuscularly to your horse immediately. Do you have the knowledge to do this or do you frantically try to locate another veterinarian?

The family milk cow is not eating. She has a runny nose and is coughing. When you call the veterinarian, the first question that is asked of you is "What is her temperature?" Do you know how to take a cow or other animal's temperature?

A magazine article cannot replace the skills and wisdom of a veterinarian, but there are many medical treatments and procedures that livestock owners can perform themselves. After you have become established with a veterinarian, many will willingly give you advice over the telephone as to what course of treatment you should pursue. This can help reduce the costs associated with owning livestock and alleviate suffering or even save the animal's life when a veterinarian isn't available.

Most experienced livestock owners administer medicines, routine vaccinations, and other shots when needed. They also perform common procedures like de-worming, treating wounds, de-horning, castration, etc. and keep a reserve of commonly used medical supplies and medications on hand.

There are two very important things to remember when treating your livestock. First, always follow the directions given by a veterinarian or those on the medication label carefully. If in doubt, contact the veterinarian before administering. Second, do not attempt any procedure that you do not feel capable of performing. Enlist the help of another more experienced person or wait for the vet.

Taking a temperature

An animal's temperature is a very important factor when diagnosing an illness and prescribing medications. This is often the first question a veterinarian will usually ask when you call them. Being able to answer the question is as important as taking the temperature accurately.

Any animal that acts abnormally should have its temperature taken before any medications or treatments are given. If medications are given prior to this, you will not know if the animal had an abnormal temperature and the medication changed it, or if the animal had an abnormal temperature at all. When an infection is present, often there will be rise in body temperature as the body's defense mechanism tries to fight the bacteria. A subnormal temperature is often a sign of shock. Just like humans, normal body temperature can vary from animal to animal. Unless you have too many to check, it is a good idea to have a record of each of your animal's normal temperatures.

An animal's temperature is taken rectally. This is the best way to obtain an accurate reading of the body temperature. You can use a veterinarian thermometer, or a digital one for humans will do fine. Never leave the animal unattended while taking a tem-



perature. Maintain hold of the tail and the thermometer at all times during the process. A thermometer can become "lost" meaning an unpleasant retrieval for both you and the animal. Lubricate the thermometer and insert into the animal's rectum. Depth will depend upon the size of the animal, but generally 1-2 inches is sufficient. Wait for the required amount of time—thermometer beeps or 3-minute lapses, depending upon the type of thermometer used. Remove and obtain a reading. Cleanse the thermometer after use.

Injections

Injections are often used to administer medications because of the ease and rapid absorption rate. Most vaccinations and emergency drugs, some de-wormers, and many antibiotics are administered by injections. The injection methods most commonly used by livestock owners are intramuscular (IM) or subcutaneous (SQ or Sub. Q.) IM injections are given in muscle mass. This is usually the side of the neck, in the hindquarters, or in the shoulders. SQ injections are given just under the skin. Any area that has loose skin is suitable for SQ injections.

ANIMAL TEMPERATURES

The following presents the average temperature range for some species of adult animals. All temperatures are given in degrees Fahrenheit.

| | |
|---------|-----------|
| Cattle | 101-102 |
| Goats | 101-102 |
| Horses | 99-101 |
| Sheep | 101-102 |
| Pigs | 101-102.5 |
| Rabbits | 101-103 |

Syringes are calibrated in milliliters (ml) or in cubic centimeters (cc). Likewise, many medications are prescribed in ml or cc. Both amounts are the same. Some medications come in pre-measured and filled syringes and are ready for administration. For those medications that don't, you will need to fill the syringe using the calibrations on it to determine dosage. To fill a syringe, remove the foil cap that covers the rubber top on the medication bottle. Hold the bottle upside down and insert the needle through the rubber and into the fluid. Pull back on the plunger of the syringe until the desired amount is withdrawn, using the calibrations on the syringe to determine dosage. Remove the needle from the bottle and inspect the syringe for air. Holding it pointing upward and flicking it with your finger will cause any air bubbles to rise. Squeeze out a

small amount to insure all the air is exhausted. Replace the cover on the needle until ready to administer.

Animals don't like shots any more than humans. Restrain the animal or have someone hold it for you. Offering food will sometimes act as a distraction while the shot is being given.

Select the site and cleanse with alcohol. Though it is impossible to sterilize any skin that has hair on it, using sterile needles and cleansing the site will help prevent infections and complications.

SQ injections are less painful and more easily given but always read the label or ask your vet. Drugs that are meant for IM can cause irritation and abscesses if given SQ. Locate an area with loose skin (neck, flank, etc.) and inset the needle under the skin. You can feel the needle penetrate and break through. Inject the medication and remove the needle. Rub the site vigorously to help absorption and prevent leaking. If administering a large volume, use several different sites instead of just one.

IM injections are a little more difficult for beginners, but will get easier with each injection given. After selecting and cleaning the site, remove the needle from the syringe. Be careful not to depress the plunger while removing. Smartly slap or firmly punch the injection site several times.

This will condition the animal and cause the nerves in the skin to tingle, thereby reducing the needle prick. Quickly plunge the needle into the muscle, but avoid going deep enough to hit bone. Attach the syringe and draw back slightly on the plunger. If blood enters the syringe, you have hit a blood vessel and the needle should be retracted or advanced, or the needle removed and another site selected. Inject the drug and remove the needle. Massage the area after the injection.

Oral medications

Oral medications are usually given for gastrointestinal related troubles or systemic therapy. If not done properly this can be a real chore because of livestock's size and strength. Restraining the animal is the first step in administering any oral medication.

Liquids are usually given as a drench, using a drenching bottle or a syringe. Never use a glass container which can break if the animal bites it or you bang it against the animal's teeth. Medications can be made more palatable and acceptable by mixing with honey, molasses, or corn syrup. Small amounts should be given instead of one large one to give the animal time to swallow in between. First tilt the animal's head upward but not so much that its mouth is higher than its eyes. Over tilting the head will contribute to choking. Try to keep the animal calm to prevent gasping which can lead to aspiration. Next insert the tube of the drenching bottle or the syringe between the animal's teeth, over the tongue, and toward the throat. Administer slowly. If choking occurs, stop and wait for the animal to recover.

Pills or boluses are easiest to administer when given with a balling gun. First lubricate the bolus with shortening or cooking oil. Place the bolus in the gun and insert the gun between the teeth, over the tongue, and to the throat. Depress the trigger to pop the bolus down the animal's throat.



Medications are sometimes given with a stomach tube. A flexible tube is inserted through the mouth or nostril and down the throat. Once the tube is in the stomach, liquids are pumped through it with a pump. Care must be taken not to mistakenly insert the tube into the lungs or to damage the esophagus with the tube. This can be a risky procedure unless you know what you are doing.

Many medications are intended to be mixed with the animal's feed or water. Though very easy to administer, getting the animal to eat or drink it is the hard part. If the medication is to be added to the water, flavoring the water for several days before adding the medicine will help to mask the taste. Molasses, Kool-Aid, or pickle juice often works for flavorings.

Medication added to the feed can also be disguised by adding molasses or corn syrup to the feed. If this doesn't work, apply a small amount of Vicks to the animal's nose so that it smells the Vicks instead of the medication. When administering medicated food or water, no other nourishment should be given until the animal has consumed the medication.

Basic first-aid

All animals are susceptible to accidents or injuries. When dealing with cuts or miscellaneous injuries, the most important thing is to remain calm and not panic. Analyze how bad the animal is really injured, then call your veterinarian and describe the injury to them *exactly*. Over and under exaggeration of animal's injuries makes it impossible for your veterinarian to make an informed decision about whether or not a visit is necessary and what course of treatment is indicated.

Most small wounds and many larger ones heal without suturing. First control bleeding if necessary by using direct pressure on the wound. Cleanse with mild soap and water or antiseptic wash, gently rinsing away dirt, debris, etc. Trim hair away from the wound.

If you or the vet decide against suturing, keep the wound as clean as possible. Bandaging is usually not required unless directed to do so or the wound is especially large. Apply an antibiotic cream or powder to the area. If it is fly season, the wound must be protected. Flies will lay eggs on the wound and surrounding area, resulting in maggots. Apply an ointment in and around the wound that will control flies.

Fractures and dislocations often result from fighting, becoming entangled in a fence, feeder, or other equipment, or being struck by an automobile. You can suspect a fracture if the limb dangles and the animal will not walk on it. Contact your veterinarian. Until help arrives, try to keep the animal quiet and unmoving unless it is in a dangerous or inconvenient place. If you have to move the animal, do so very slowly and carefully.

Shock is a life-threatening condition. It is exhibited by rapid breathing and pulse, weakness, prostration, and often subnormal body temperature. If the cause is apparent (falling through the ice and becoming severely chilled or heat exhaustion), alleviate the cause and contact your vet for further instructions. If the cause cannot be determined, such as after trauma or an accident, contact your veterinarian immediately. Internal bleeding is a possibility.

When providing first aid to an animal, if in doubt perform the same treatments as if the animal was a human.

The medicine cabinet

One of the most important things you can have in your medicine cabinet is a good home vetting book. It can be a tremendous help when a veterinarian is not available. Both the Merck Vet Manual and A Veterinary Guide for Animal Owners, by C.E. Spaulding, D.V.M. are excellent books.

Needles and syringes are generally purchased in disposable plastic form. I clean and reuse both the needles and syringes with alcohol and hot water,

although needles will dull with repeated use. 20-gauge needles in 1-inch lengths are good all-purpose sized needles. A 3cc syringe is sufficient for most uses but larger ones may be needed for larger animals (when giving an antibiotic to a sick cow or horse for example). For this purpose and for washing wounds, I keep 60cc syringes in stock.

Some drugs and medicines, like antibiotics and de-wormers, are administered according to the animal's body weight (E.g.: 1 ml per 100 pounds of body weight). Weight tapes are available that will provide you with a reasonable estimate of the animal's weight if you do not feel comfortable guessing.

Check with your veterinarian for their recommendation on what drugs you should keep on hand. Also store the drugs and medicines in accordance with the label instructions. A tetanus antitoxin, Tetracycline, Procaine penicillin G, Betadine or other broad-spectrum antiseptic, antibacterial ointments, alcohol, Kopertox, blood stopper powder, petroleum jelly, hydrogen peroxide, and the old stand-by Bag Balm are good to have. Epinephrine is a powerful, quick acting, drug that is used in the treatment of circulatory collapse and anaphylactic shock. When one of these problems arise, it must be administered immediately to save the animal's life. Keeping a bottle of this on hand for quick administration when ordered by the vet can mean the difference between an animal's life and death.

Vetwrap is a valuable supply to have on hand. This unique bandage sticks only to itself and does not require pins. It is excellent for holding a dressing in place. Elastic bandages are wonderful for temporarily holding ice or heat packs on extremities. Gauze dressings for humans are handy to have, and sanitary napkins perform wonderfully when applying direct pressure on a wound. Thermometers, balling guns, and drenching equipment are almost a necessity. Δ

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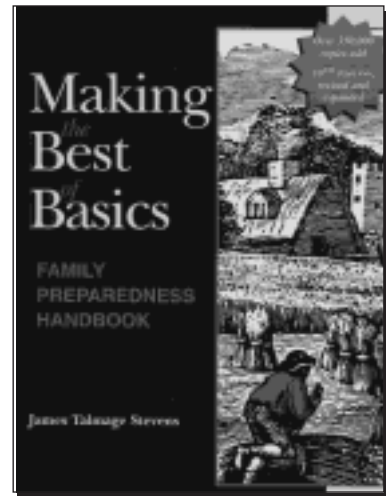
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Five great breakfasts that are good for you

By Jennifer Stein Barker

Breakfast is a meal some people have trouble with. We are supposed to eat in the morning because after 12 or more hours since dinner, we need calories to fuel us for our day's work. Still, a heavy breakfast may not lay easily on a sleepy stomach. My usual style of grains and fruits seems just right for me. Try it, and see if you like it.

My mother always told me that I should eat breakfast because it was good for me. With food like this, I don't have any trouble getting myself properly set up for the day.

Gone-nuts granola

This is a good, simple granola with no dried fruit in it. It goes wonderfully with whatever is fresh in season. Makes 5 cups:

Ingredients:

- 1/4 cup oil
- 1/4 cup honey
- 3 1/2 cups old-fashioned rolled oats
- 1 tsp. cinnamon
- 1/2 cup cashew pieces
- 1/2 cup walnuts
- 1/4 cup almonds or hazelnuts
- 1/4 cup sunflower seeds
- 1/4 cup coconut

In a large pot, warm the honey and oil until they will blend. Do not boil. Quickly add the rolled oats, tossing to coat with the honey mixture. Then add all the other ingredients and stir well.

Preheat the oven to 350 degrees. Pour the granola into a 9x13-inch baking pan and bake for about 30 minutes. Take the pan out and stir the mixture after the first 10 minutes, paying attention to the corners so they do not burn. Check and stir the mixture at more frequent intervals until it turns golden and is almost dry. When it is nearly done, you may have to check it every three minutes or so.

Remove the granola from the oven. Cool at room temperature, tossing frequently to insure that ingredients do not stick together. When completely cool, store in airtight containers in a cool place.

Almond-orange granola

This granola can be altered to suit your mood—just change the type and/or proportion of sweeteners to your taste. Any way, it's a flavorful way to start your day. Makes about 7 cups of granola:

Ingredients:

- 1/3 cup oil
- 1/3 cup sweetener, use honey, maple, molasses, barley malt, or fruit syrup
- 4 cups rolled oats
- 1/2 tsp. almond extract
- 1 tsp. dried orange peel
- 1/2 cup unsweetened flaked coconut
- 1/2 cup raw sunflower seed
- 2/3 cup chopped or chunked almonds
- 1 cup raisins

Preheat the oven to 350 degrees, and get out a stockpot and a large baking pan that is at least 2 inches deep.

Measure the oil into a stockpot, and then use the same cup to measure the sweetener. My favorite combination is to fill the measure not quite to 1/3 cup of honey and then add a dollop each of maple and molasses to get a total of 1/3 cup. Warm the oil and sweetener gently over low heat until they will stir together. Do not boil.

Add all the other ingredients except the raisins. Stir well. Pour the granola into the baking pan, and bake for about 30 minutes. Take the pan out and stir the mixture after 10 minutes, paying attention to the corners so they do not burn. Check the mixture at more frequent intervals until it turns golden and is almost dry. When it is nearly done, you may have to check it every three minutes or so.

Take the granola out of the oven and immediately add the raisins. Stir occasionally as it cools. When completely cool, store in an airtight container in a cool place.

Raspberry seven-grain cake

You might have to wait till summer to make this with fresh raspberries. Meanwhile, try some frozen ones, or cut up some juicy home-canned peaches, and make it Peach Cake. This recipe makes an 8x8-inch cake of 12 pieces that is great at breakfast:

Topping ingredients:

- 1/2 Tbsp. oil
- 1 Tbsp. honey
- 1/4 tsp. cinnamon

Cake ingredients:

- 1/3 cup seven-grain cereal
- 1/2 cup yogurt
- 1 1/4 cups whole wheat pastry flour
- 1/2 tsp. soda
- 1 tsp. baking powder

¼ tsp. dry grated orange or lemon peel
½ tsp. cinnamon
¼ cup oil
⅓ cup honey
1 egg
1 Tbsp. lemon juice
1 tsp. vanilla
1 cup fresh or frozen raspberries

Preheat the oven to 350 degrees. Lightly oil an 8x8-inch square cake pan. Put the topping ingredients in a small heat-proof cup, and warm on the lowest setting just until they will blend. Do not boil.

In a medium bowl, stir the cereal and yogurt together. Let soak for 10 minutes. In a separate bowl, stir together the flour, soda, baking powder, peel, and cinnamon. Set aside. Add the oil, honey, egg, lemon juice, and vanilla to the yogurt mixture. Stir well to mix. Add the dry mixture to the wet mixture. Stir just to combine.

Spread the batter in the prepared pan. Spread the berries loosely over the top (the batter will puff up around them as it bakes). Stir the topping ingredients together and spoon/drizzle them over the top of the cake.

Bake in the 350 degree oven for 35-40 minutes, or until the cake tests done. Cut into 12 pieces and remove the pieces to a rack with a spatula. Serve warm, or at room temperature. May be kept in the refrigerator for several days.

Mocha-apple loaf

Chocolate cake for breakfast? Why not. This tender loaf cake is not too sweet. If you do not have all-purpose whole wheat flour, use a blend of equal parts whole wheat bread and cake flour. Makes one 5x9-inch loaf:

Ingredients:

1½ cups all-purpose whole wheat flour
½ tsp. cinnamon
¼ tsp. instant coffee
¼ cup unsweetened cocoa powder
1 tsp. soda
2 cups chunky applesauce
3 Tbsp. oil
⅓ cup honey
1 egg

Preheat the oven to 350 degrees. Lightly oil a 5x9-inch bread pan.

In a medium bowl, stir together the flour, cinnamon, instant coffee, cocoa, and soda. Set aside. In a large bowl, mix the applesauce, oil, honey, and egg. Beat with a spoon until well-blended. Add the dry mixture to the wet, stirring just until moistened. Do not overbeat. Scrape the mixture into the prepared pan.

Bake in the 350 degree oven 35-40 minutes, or until loaf tests done. Remove to a rack to cool. Use a long, thin, serrated knife to cut into slices. May be served warm, or cooled and stored in the refrigerator. This may get soggy if kept more than a few days.

Banana-nut-bran pancakes

The aroma and texture of these pancakes is delightful. This makes a more hearty breakfast than the others in this article. Serves 4:

Ingredients:

1 cup whole wheat pastry flour
⅔ cup whole wheat bread flour
⅓ cup wheat bran
3 teaspoons baking powder
1 ripe banana
3 eggs
3 tablespoons oil
approximately 1½ cups milk

If necessary, sift the pastry flour and the bread flour. Place them in a medium bowl along with the baking powder and the bran and stir until well-blended. In a separate bowl, mash the banana and then add the eggs, oil, and the milk. Beat well, then add the dry ingredients to the wet ones. Add more milk if necessary to make a fairly thick batter, one which will pour from the bowl but will mound up on the griddle to make a thick pancake (if you thin the batter too much, the pancakes will be gummy, but if it's too thick you will just have thick pancakes).

Preheat a skillet or griddle over medium heat with a little oil to coat the bottom, until a drop of water thrown on it sizzles and evaporates. Spoon batter into the pan to make pancakes the size you want. If the batter mounds up too high, try shaking the pan a little to level it down. When the top surface is covered with bubbles, flip them over. They should be a nice golden brown. These are great served with warm honey or wild fruit syrup. Δ

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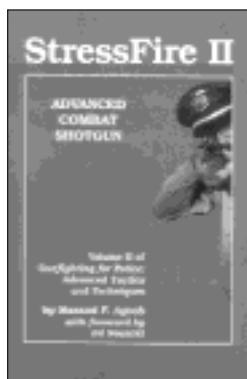
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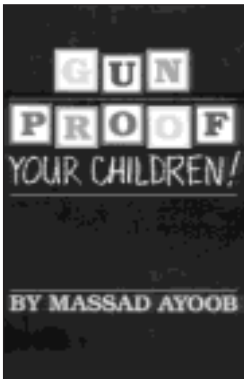
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Dealing with ticks

By Tom R. Kovach

Ticks are not only a nuisance, they can transmit diseases such as Lyme disease and Rocky Mountain spotted fever.

The tick problem is at a peak from spring to late summer when people and pets spend a lot of time outdoors. Here are some tips to protect you and your pet:

- Avoid tick-infested areas such as wooded, brushy, or grassy areas. If you cannot avoid these areas, use insect repellent and closely inspect yourself and your pets following each exposure.
- Look for ticks where collars, belts, waistbands, straps, socks, and boot tops restrict their passage. Check hair and hairy areas.



- Consult your veterinarian for tick-specific pet protection to keep ticks from invading your home and family. Protecting your dog is the first line of defense for the whole family.
- Remove ticks carefully with your fingers or, preferably, blunt-nosed tweezers. Grasp the tick as close to the skin as you can. Pull steadily. Do not

jerk or twist the tick. Do not break down mouth parts. Do not crush, puncture, or tear attached ticks.

- If you note symptoms such as skin rash, chills, fever, or pain in the joints, see a doctor.

To protect your dog, try the unique Preventic Tick Collar for Dogs, available only through veterinarians. This collar kills and detaches ticks and keeps new ticks from attaching for three months.

Remember that detachment is important too, because dead ticks can cause infection if they stay attached. Δ

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Letters

(Dear Readers - Thank you for writing to Backwoods Home Magazine. The opinions and suggestions we receive from our readers are very important to us. We regret that we are no longer able to print or individually respond to every letter received due to the volume. We do read every letter received, and pass them along to the editor or writer concerned. We print a selection from our mail that best represents the views and concerns of our readers.
— The Editors)

Drugs and guns

Just wanted to drop you a line and let you know I agree with you on your current editorial about drugs and guns.

Backwoods Home is a great inspiration to me and my family. Through it we have been making plans for the move to our 20 acres in the Texas Hill Country. Through the articles in your magazine we have been able to develop a plan of action for a self-sustaining homestead which will be developed over a five year period. Keep up the great work. God bless you and your family and staff.

Ron Flippo, San Antonio, TX

Hawaii

Thanks again for a great magazine! Just got my Nov./Dec. issue, (mail is a little slow to arrive where I am living). Enjoyed Skip Thomsen's article on the Big Island of Hawaii. he is right on with his observations and information. However, being a former long time resident, I am compelled to add my two cents worth.

Before anyone jumps on a jet to move to the Big Island, please visit first. Several issues have lessened the quality of life there. One is the vog, when Kilauea volcano spills lava into the sea, the accompanying vapor cloud produces hydra-sulfuric acid fumes. This not only effects the finish on your automobiles and such, but if you or anyone in your family have

any respiratory problems, it can aggravate those severely. The vog up until the past few months has been continuous for 14 years. If the winds blow it out to sea, it is not so bad, but normally the Kona side of the island is covered by a blanket of fumes.

Secondly, the continual flights of helicopters overhead, searching for marijuana in everyone's backyard, are to say the least a major annoyance. The drug cops are so bold as to fly low and peer into the windows of your home. My wife has some nice photos of them trying to get a look at her while dressing one morning!

If they spot any growth, they either spray an agent orange type substance to kill the plants, or repel down and harvest the crop. Keep in mind, most home water supply in this area is by means of open air catchment systems. There are numerous reports from residents of ill side effects, on themselves, their livestock and anything they may be trying to grow.

Thirdly, since the all knowing Federal Government started their marijuana eradication campaign on the Big Island, the drug pushers have turned to selling crack. There is no serious effort being put forth to stop this however. So now, thanks to big brother, there is a very serious hard drug problem, families are being completely wiped out in this epidemic. It seriously breaks one's heart to witness this!

My wife and I are trying to raise our six children the best we know how, and have moved lock, stock, and barrel to another small South Pacific Island. It is as Skip described the Big Island, without all the problems. Is it Shangri-La? No, but there is not Federal Government, no helicopters, Y2K does not exist, and the local law

enforcement personnel have no need to even carry firearms!

Freedom is surely precious, the sacrifices we have had to make are many, but worth it? Absolutely yes! Well I have rambled on enough. Just remember, there is no paradise on earth.

Tim Missamore, Cook Islands

I would like to comment on the first "Places to Live" article in Issue 60, advocating the Big Island in Hawaii. I would like to see in these articles a thorough examination of issues important to freedom-lovers, such as whether a locale has unconstitutional laws restricting the right to keep and bear arms. According to "Safe, Not Sorry" by Tanya Metaksa of the NRA, Hawaii has quite restrictive firearms laws. "Assault pistols" are prohibited. Every person arriving in Hawaii is required to register any firearms brought into the state within three days of arrival. Handguns purchased from licensed dealers must be registered within five days. Hawaii requires a permit to purchase all firearms, with a 14 day waiting period after the application. A handgun purchase permit is valid for 10 days, for one handgun. A long gun purchase permit is valid for one year, for multiple long guns. Records of gun sales are reported to state or local governments.

Another example of anti-freedom restrictions is infringement on property rights and the right to travel associated with automobile ownership. Some states have mandatory vehicle safety inspections and/or auto emissions testing. The car must pass or the owner is unable to renew the registration. And if the cars need repairs, can the owners do it themselves? Oh nooooo! You don't suppose they are trying to outlaw self-reliance, do you?

Other issues to consider: taxes, of all types: property, sales, income, estate. Also: zoning, building permits,

inspections of homes and septic systems. Are composting toilets permitted? I have heard of one Ohio county that has banned cisterns.

Basically, what I am looking for is a place where Big Brother doesn't live.

PS: If you decide to print any part of this letter, I would appreciate not being identified. Hey, why paint a bullseye on my back identifying myself as a dangerous "hate-monger" who has anti-authoritarian, anti-government views?

Joe Schmoe, Anywhere, OK

I think your article on Hawaii, specifically the Big Island, is way off the mark and could even prove dangerous to those of us outside the norm (Libertarians, Conservatives, rabble rousers and the sort.)

I spent about 2½ years in Hawaii while on military assignment (now thankfully over) a paradise, a wonderful, tropical, beautiful place, you would think—I suppose—but, in truth, there is a much darker side to the sun & fun. (Although I was only on the Big Island about a dozen times—It was for 20-35 days at a stretch.)...

For instance, while I was there, I went thru 2 hurricanes, 2 volcano eruptions that we had to evacuate civilians, and caused a chopper to go down, witnessed a shark attack by a Tiger shark 13½ ft long. And read about many more in the paper—I think 5 in one season—not year saw a murder, read about many more, been thru a couple volcanic earthquakes, my now ex-wife, transvestites by the truck load—and semi-legalized prostitution. Not to mention the locals Hate (read Hate) the White Devils from the mainland—(see Capt. Cook.) Also, one of the most liberal states in the union, that have been trying to legalize gay marriages for years! Not to mention a big Demonizer of guns & self protection—(Read—Pepper Spray Is Illegal

to Carry!) (My ex-wife was detained for it believe it or not!) Oh, yeah, I almost forgot to mention that it rains a lot, it gets cold as hell on the Big Island at night, especially in their winter season—and I sprained my ankle really bad once too! Just thought you should know.

Michael Shaum, Elkhart, IN

Cement floor help

I want to put a wood floor over my cement basement I live in so it will be warmer and not so hard to walk on. Can you help me out here. I know 2x4s will have to be put down before the overlayment. Is there some foam strips or something that can be put between the 2x4s for more warmth?

Dorothy Lemmerhirt, Red Wing, MN

I converted a garage into an apartment about 10 years ago, and part of the conversion involved putting a wood floor on top of the concrete slab. Two by fours, turned on edge, with regular fiberglass insulation in between, worked fine for warmth. On top I put plywood, the best quality pad, and a rug. — Dave

U.S. Constitution book

Enclosed is \$3 for pocket size copy of the Declaration of Independence and the U.S. Constitution.

The last time I have seen anybody urge citizens to read and have a copy of the Constitution and its amendments was on the album jacket cover of the old Frank Zappa record LPs bought 30 years ago.

Charles Arnold, Amityville, NY

Glad you like it. We've sent out 7,000 copies of it so far. — Dave

Evolution article (Issue 61)

We have been subscribing to BHM for a year and intend on renewing for another year. My wife and I enjoy the magazine a great deal and find the self-sufficiency articles very benefi-

cial. We even enjoy the Libertarian commentary. However, I did not subscribe to your magazine for science articles (and we do homeschool) and think that the space could be better used at what you do best, self-sufficiency. Yes, we strongly disagree with evolutionary 'science' and won't be using it to teach our children, but that is not the issue. Homeschooling material can be obtained elsewhere but good how-to material is hard to come by and is something in which your magazine excels. I appreciate the new ideas in the magazine and encourage you to continue.

Mick Bosworth, Longview, TX

I stand here with egg on my face. I sent two gift subscriptions of your (usually) fine magazine to dear Christian friends of mine. If you are purposely trying to offend your Christian readership then congratulations, I think you've succeeded. Please be a little more sensitive next time in your choice of homeschooling subject matter. Stick to true science and not evolutionary THEORY. There must be a bizzillion other subjects you could have chosen to explore. It's this kind of junk science that causes parents to pull their children out of public education in the first place.

VardjanM@gethealthnet.com

I know it looks like you put a lot of work into this article, but I am grieved at your presentation of this conjecture as fact and something to use for educational purposes, especially in the mainly religious environment of home schooling. Please use your heads! You are creating many enemies of your publication with this most recent mailing. I will give you the benefit of the doubt and assume you did not have any evil intentions while putting this to press. You certainly must be good hearted people for giving us a decade of very useful information, and I believe the unfortunate poor in our society have bene-

*fit*ed greatly with the many cost cutting ideas provided. The fact is though, God created the heavens and the Earth. Exactly how He did it, besides the word of His mouth, I do not know, and I do not believe that science will ever conclude how. That is why God requires faith. I was not there, nor was anyone who has ever claimed to know by "scientific evidence" how the foundations were laid. Consequently, I would greatly appreciate a statement in your next magazine to declare this outrageous article of speculation as just that, speculation. I also pray that faith in God would become your premise for presenting what is truth and what is a lie.

Jeff Gray, Gettysburg, PA

If every reader out there wants their favorite magazine to reflect their views and beliefs and nothing but their views and beliefs, then no wonder there is not another magazine like *BHM* on the market. Pro-government leftists, environmental Nazis, and the politically correct Gestapo crowd all hate *BHM* because we have stated things they disagree with.

We don't mean to create enemies, and this magazine has been far more friendly toward Christian beliefs and values than almost any other magazine I can think of. Seven Christians are among the 10 people who staff this magazine. Four of the seven believe in creation, while two believe in evolution; the seventh believes either theory is consistent with the Bible. None of these Christians has become my enemy as a result of this article; they are as tolerant of me as I am of them. — Dave

Jokes, religious editor

Just was reading this issue's (#61) Letters, and I felt you might want to hear some different points of view—

1. We LOVE irreverent joke page. Maybe not all of it is hilarious, but then only 6 out of 10 jokes heard any

given week are even mildly funny, so your percentages aren't too bad!

2. The person trying to get hired as religious editor gave homeschoolers as one of the reasons you might need a religious editor. The flight from the public schools may OFTEN arise from religious reasons, but I would say by no means ALWAYS, or not even mostly. The conservative religionists are so loud in the homeschooling movement that the rest of us, who homeschool out of a combination of other factors including quality education, depth, ethics, and just plain love, get a feeling we might be burned at the stake if we suggest these other reasons...

So I hope you don't feel pressured by loudly stated opinions!

Janet Leake, Lebanon, WI

*Regarding the letter from Michael Briggs on pg. 88 Jan-Feb 2000 on having a religious editor—if anyone wants to get religion, go to church or read the bible. If anyone is so hard up for information or inspiration for their religion that they must come to *BHM*, I suggest much better sources are available.*

Keep religion out of Backwoods magazine. It is bad enough to hear the presidential contenders (both Democratic and Republican) ass-kissing Pat Robinson and Jerry Falwell. Just don't go there. Give us useful information and leave religion where it belongs—in church and with the individual. To each his own belief. You have no business getting into religion of any kind. If you decide otherwise and go ahead with religious articles, please cancel my subscription with the first one. I'll say a prayer that you are wise enough to leave religion where it belongs...

Frank Summers
serndip@aol.com

Don't worry. There'll be no religious editor. — Dave

I just ordered your big Christmas offer (trilogy & subscription). I picked-up a copy of your mag., first time ever this month. What a great magazine! Thanks for having the courage to run your politically incorrect jokes. My wife and I really got a chuckle.

Keith Cutter
keithcutter@fotogallery.com

New York Times

Thought that you'd like to know that there was a recent article in the New York Times that implied that Backwoods Home Magazine is a haven for Y2K wackos, citing some of the advertisements, but ignoring the articles and editorials. I found it amusing because in the same issue of the Times, they also had their share of Y2K advertisement. I guess that one whizzzzed right past them.

You guys are the best. I can't wait until the next issue comes out. My wife and I each compete to see who can get to the magazine first and read it before the other. It could be a new game. It is a lot of fun, especially if you win!

William M. Bell, Jr., Bellaire, TX

Nice to know such an influential paper takes note of us. Usually the liberal media pretends publications such as *BHM* do not exist. We must be making people nervous. — Dave

Solar system article (Issue 60)

*Your story in *BHM* "How big is the solar system" is a winner, thanks. If I could write I'd have come up with something like that. While astronomy is a passion of mine, writing is something I have never done and really wouldn't know where to start.*

Bob Johnson, Cape Canaveral, FL

Self-sufficiency

Enclosed is \$5.00. Please send me issue #55. It's not that I'm interested in "doom & gloom" it's that I'm

interested in simple solutions toward self-sufficiency hope this issue contains many.

My spouse & I live simply & comfortably here in the city on around \$8,000 a year for both of us. The federal 1999 poverty rate for two is \$14,378. What's the big deal! We made our last house payment when I was 33 yrs. old. I refuse to live in debt. We buy basic transportation new for cash & drive them 'til they die, presently owning a 10 yr. old "econo-box" and an 8 yr. old truck. I diligently keep track of every cent coming in & leaving. This helps immensely to keep down unnecessary expenses. Been living this way for around 16 years, fine tuning constantly. There are many pros & cons of city living—the cons being the almost constant noise & the umbilical cords: gas, electric, water, phone & cable TV for the spouse. I hate them bills! To me "the land of the free" also means more self-sufficiency. I would much prefer less house, more land & more control. It's the spouse I have to accommodate who prefers flipping on switches—the furnace, the A/C, cable TV, the VCR, long hot showers & the conventional wasteful flush toilet. (One of my most favorite books is *THE HUMANURE HANDBOOK*. How low-tech!) What a waste of resources. I could live so much more sanely and comfortably in a passive solar super insulated sound-proof home off the grid. It doesn't cost to dream! My escapism is reading material on low-tech self-sufficiency, buying some for my reference library and using the public library. I get high on low tech! The washer died five years ago. Sold it (for scrap metal). Haven't replaced it. Never will, hand washing is almost a spiritual experience for me. Especially the line-drying part.

Thanks & hope you don't mind reading my letter. I'm trying to keep the art of letter writing alive in this age of high-tech everything. No com-

puter in this house—just low-tech basic lead pencils picked up when walking—along with clothing, money, gold rings & other goodies disposed of by this wasteful society.

Sandy Davis, Grand Rapids, MI

Applause

I had always, along with my friends and family, considered myself to be a pretty odd sort of person. After all, what "normal" person would give up a perfectly good cell, uh, I mean condo. To go grub it out in the dirt and bugs? Not to mention lions and tigers and bears (oooooh my). I once told my mother that my idea of a dream date would be the kind of gal who could show me the proper method for turning fresh roadkill into jerky (she thought I was joking). This kind of thinking doesn't endear one to city folk. It's ok, they tolerate me and hush the children when they say rude things about "wierd uncle Sonny". Well, anyway, after nearly 30 years of procrastination, wrong turns, trials, errors, and deals gone bad, I'm finally on the threshold of realizing my lifelong dream, having just acquired a nice little piece of mountain property, which I intend to homestead. Two days after the seller accepted my offer, I chanced upon a magazine in a convenience store. "Hmmm, *Backwoods Home Magazine*. Well I'm not all that far out of town, but I guess that's sort of what I'm doing." So, I leaf through this magazine, and my entire world view is shattered! I mean, it stands to reason, (doesn't it?), that if they go to the trouble to publish the magazine that people must read it, right? And if people like to read this kind of stuff, there must be a whole bunch of folks out there who think a lot like I do! Maybe I'm not such an oddball after all! There could be dozens, maybe hundreds, who knows? maybe even THOUSANDS of people I could be really good pals with! I might even have to learn "How works a computer" so I

can do the e-mail thang! Well, anyway, after having perused no less than two issues of your wonderful magazine, I pronounce *Backwoods Home* to be the finest publication on the face of the earth, and will brook no steenking argument to the contrary. I can think of several times I would not have had to go without my "Din Dins" had I been a subscriber. Where have you been all my life? But hey! what's all this Libertarian stuff? My impression, gathered from what I see in your magazine, is that the general idea is to try to salvage what lucid thinking the Republicrat-Demopublicans have done, throw out the silliness and nonsense, mix in a double helping of Liberty and Justice for all, then tell Big Brother to go to his room, and stay there until he can behave himself in polite company. If that's a fair description, ok, I'll bite. Where do I learn more?...Hey, about this survivalist thing. Doesn't everyone want to survive? Is anyone going to seriously tell me that all those Jons' and Janes' Doe out there are going to throw their hands in the air, soil their trousers, and rush out to hang themselves when faced with the prospect of a society and/or government unable for the moment to dish up their daily bread and circus? Hah! I think if far more likely that in about ½ a heart beat they'll turn buccaneer and start marauding those who prefer an insurance policy composed of material goods and tools rather than one of green paper. If I choose to accept some measure of direct responsibility for my continued well being and prosperity instead of entrusting it entirely to strangers in Washington D.C. and New York City, am I a survivalist? Well than, I guess I'm a survivalist or whatever. I wish people wouldn't talk crazy.

Sonny Lee Johnson
Saint George, UT

I received my first issue of *Backwoods Home*, Nov./Dec. issue,

and have not put it down...read cover to cover the first few days. Now I page thru it daily...it's looking like my old Playboy mags after searching for the nudes.

Wayne Mack, Young Harris, GA

I am one of your many subscribers who does actually live "off the grid." My husband and I retired this past August to our home deep in the San Juan Mountains of Colorado. It's 34 miles to the nearest town. I will readily admit that when your magazine arrives I read it cover to cover—nearly every word of it. This past hunting season we got our first elk and tanned the hide, with the help of your informative article from the Nov./Dec. 1995 issue. I just have one comment about a remarkable error I noticed in the Jan./Feb. 2000 issue. Bear in mind that you seem to have been doing your best to keep the "panic" out of the Y2K fiasco. So this typo was especially humorous to me. On the "Publisher's Note" page in the front of the magazine, you announced that you'll draw one more winner of a complete set of back issues of Backwoods Home Magazine, and that the drawing will be held January 5, 1900! Boy, will people ever be confused now!

And by the way, I was totally amused to see that Old McDonald is employed by you as a computer consultant.

Keep up the good work—you seem to be having fun, and you're certainly filling a void out there.

Sally Oster, Jasper, CO

Thanks Sally. We do have our clever jokes strewn throughout the magazine. — Dave

I know you probably hear it often enough, but I simply wanted you to know that you produce an outstanding magazine (and web site) that has proven inspirational to me. I've had

to purchase all of the anthologies to get me through between issues.

I like your opinion and the edge it gives to the magazine. I am also a great fan of John Silveira and the all knowing O.E. MacDougal. If you ever get rid of John, I may just cancel my subscription. I marked his articles in the anthologies and my grandmother loved the ones about the First Ladies.

After reading some of the articles (beginning with the cooking ones and moving on to Silveira's history lessons), my wife has even stopped rolling her eyes when she sees me reading it.

John Titgemeyer
Mississauga, Ontario

I live in a NYC apartment, and have been looking for information on food gardening on my balcony. The information has been almost non-existent; until I found Nancy Wolcotts article today on the website. Praise Goddess!

The article was so packed with useful information that I believe that I can finally realize my dream of balcony-grown fruits! Please let Nancy Wolcott know how great her article was. It's also nice to see that your magazine, while titled Backwoods Home, has information that even city dwellers like me can use.

Sonia Roman, Sonia@brandwise.com

After shamelessly having rooted through your website (backwoodshome.com), downloading articles with almost maniacal glee, I subscribed this past month to your magazine. I simply had to, your publication is just too valuable to not support. The magazine's practical articles and commentaries are both stellar in quality.

Glenn C. Joseph, Jonesboro, AR

Only last summer I was introduced by a friend to BHM, and fell instantly in love with it. Here at last was a

forum for people like me: responsible, independent, liberty-loving individuals. After thoroughly reading several issues and finding each article interesting and informative, I have decided that I just can't take the risk of missing an issue, as they quickly sell out at the local bookstore; yours is far superior to the competition (articles about \$8,000.00 50 cal. BMG sniper rifles are interesting, but I'm a bit more practical-minded).

So, after much debate with the penny-pinching, miserly side of my personality, I have decided to treat myself with this Christmas gift. My best friend and I—convinced for years that our views were of a minority and viewed by most as rather radical—have jokingly referred to ourselves as "paranoid-schizophrenic paramilitary gun nuts"; It's a great relief knowing we're in such good company.

Darrin Lehman, Rantoul, IL

I have recently bought your magazine and think that it is one of the best I have read. I wish that I could have known about it sooner. I am retiring from the U.S. Marines on Christmas eve., and plan spending the rest of my life in a tranquil situation. I have served 22 years and am ready to settle down from the fast and complex life of the military. I grew up in Townsend, Massachusetts and at the young age of eighteen decided to see the world. I can tell you from my true life experience that there is nothing like the good OLE U.S.A. Your WEB site was great and I have recommended it to many of my friends. You can be sure that I will be on your mailing list next month.

Will Bergeron
bergeron@wna-linknet.com

I believe yours is the best magazine I've read so far. I enjoy almost every article. I've just extended my subscription. I also ordered two Anthologies, two other books & your

pocket-sized copy of the Declaration of Independence & the U.S. Constitution.

But after 20 hrs. of being awake I messed with the math so I'm sending 2 dollars with my money order to make it up.

Something I've been wondering is if you have ever written an article on Icehouses. I don't remember if you did or not but if not, I'm sure some people may enjoy it.

Bruce Ellis Jr, Muskegon, MI

Never did an article on an icehouse. Anyone out there want to write it?

— Dave

I really enjoy reading your magazine, and am very glad you continue to publish such quality articles. You are truly helping to preserve knowledge from the past that is precious, and may become critical to the survival of many of us.

I am not a subscriber, but my boss is! I have the privilege of reading his copies—I file them, of course, so I can read them when I'm on break or at lunch. He allows me to borrow back issues, too, and I really appreciate it.

Recently I was browsing through his copy of the Best of the First Two Years of Backwoods Home Magazine, and saw a portion of a rhyme printed there, on page 100, from the February/March 1990 issue. It is printed as a shaded inset. No title is given, but I know the title!—and I know the rest of the poem. I had to memorize it for recitation in the third grade back in Foosland, Illinois in 1950! (I'll be 57 in October so I guess my memory hasn't completely failed me yet.) Here is how the whole thing goes, in case any of your readers might enjoy it:

ELETELEPHONY

Once there was an elephant, Who tried to use the telephant...

No, no, I mean en elephone, Who tried to use the telephone...

Dear me, I am not certain quite, That even now I've got it right.

How e'er it was, he got his trunk, Entangled in the telephunk;

The more he tried to get it free, The louder buzzed the telephee...

I fear I'd better drop this song, Of elephop and telephong!

Keep up the good work. The country needs you, even though most of the people don't know it yet! Do you think there could be riots and fist-fights over back-issues of Backwoods Home Magazine once the general public realizes its need for basic living instructions? (Smile.)

Bess Huber, Arlington, KY

I just wanted to drop you a quick note letting you know how much I appreciate the way you do business. About a month ago I sent you an email stating I did not receive an issue of your magazine. Within 1 week I was sitting in my chair reading the missing issue. When it came time to renew my subscription, I mailed my check and figured I would not see the little book on the Declaration for the standard 4-6 weeks. Within 10 days I was reading it!!!! Great job, guys. Keep up the good work. If only all businesses were as great to work with as you.

Suzie List, JBL1518@aol.com

Treasure of articles

You are creating a treasure of articles about how to deal with the reality of the actual world. Too many of us who live in cities have no idea what is really real and how we really live on the efforts of others who give us everything we have. We seem to think that we make the things we use by our efforts that make the money that we spend to buy those things.

The reality of our lives is that we do nothing but consume and those people who grow our food, make our furniture, process everything that we

use, and provide other services are the people who really live and experience life like it was supposed to be.

I think your magazines and anthologies are truly a treasure of how to live life. In that vein, I would like to see some articles that are generated by someone interviewing the old-timers who have done it all. Illustration should accompany this type of article. (By the way, your illustrations have gotten much better since the early days. They are bigger, more complete, and there are more of them.) I know this sounds like the Foxfire series but surprise!!, this is what your magazine is—a wonderful and more complete fulfillment of the Foxfire series. I really have a desire to see articles about interviews with old people who know how to do some of these things smoothly and as a natural part of life. So many things that we don't value right now are still valuable and can make our lives much more full.

Thanks again for all your efforts and care in putting out such a difficult magazine. I will never stop subscribing to it as long as you adhere to your original goals.

Mike Briggs, wmbriggs@gte.net

Doom & gloom preparation

Enclosed \$2 for the "Doom & Gloom" issue of your magazine, as advertised on KSWM, Aurora, MO. Besides being an eagle scout, I taught survival to the 58th Strat. Rec. at Eielson NR. Fairbanks during the Korean flap.

As I have no interest in spending my final years in a senior care facility, playing bingo, cards & line dancing, I'm building an efficiency apt., all concrete, including the roof, with lots of steel reinforcing, so I won't have to worry about tornados, fire, or baseball sized hail. Though I have a good mixer, and have long patronized Kay Concrete Company, I'm mixing in one of my wheelbarrows, so I'm in better trim than many 1/3 my age. Will

skip the modern amenities like A/C, the lousy TV, and live like my ancestors did in Albany, NY over 200 years ago. Heating in part will be done by Fresnel Lenses focused on heavy pieces of steel. Thanx for the mag.

Carl Vroman, Monett, MO

US Man and Biosphere program

. . . I appreciate in particular the "Think Of It This Way" columns. They have served to educate me greatly on the Constitution and the Libertarian party. Like many people I know, I believe that the two dominant political parties have long since ceased to serve the American public in the proper manner, and I find myself increasingly angry at what they're doing in an effort to protect us "wayward, ignorant children." I feel that your magazine is a great asset to any person who loves this country and values his/her freedom. Thanks to you, I have been awakened to what is really going on out there, for you have alerted me to many things that the larger national media ignore.

One thing that I would like to bring up at this time is the US Man and Biosphere program (US MAB). I don't know if you're aware of this or not, but I am because it is affecting us locally.

*Basically, the US MAB is part of the larger UN program which sets aside certain lands which they term World Heritage Sites. Ostensibly, these sites are to be part of a conservation program, but what they apparently really do is evict people from lands on which they live. These Heritage Sites have several different zones in them, and one called the Core Zone cannot be used **in any way** by humans. One of these groups recently visited Yellowstone and the end result was that a gold mine that was to operate six miles **outside** the park was prevented from being opened. And this was a company that had already*

spent millions of dollars cleaning up the results of previous mining efforts. Camping areas were to be severely cut back inside the park, and several property owners were to be bought out to increase the "buffer zone" surrounding the park.

And in 1993, President Clinton signed a treaty which would have set aside the entire United States as a biosphere, with over half of it set aside for wilderness Heritage Sites of varying use.

Perhaps this may sound like an overblown conspiracy theory, but there are various websites dedicated to educating the public as to the true aims of the UNESCO program and its US "subsidiary." One in particular, <http://www.cafes.net/mo/un.htm>, gathers most of the information available together in one convenient site and provides links to back up what they say. . .

Gil Miller

kntutanka@yahoo.com

Long lasting insoles

If you want your insoles for your shoes or boots to last almost forever, just do what I did.

First I went to the K-Mart store and bought a pair of Dr. Schools—(or Dr. you know who)—Extra Cushioning insoles with sure-grip foam (2 x the cushioning) costs about three bucks.

Next I carefully cut the pattern card they give you one boot at a time because your feet aren't always the same size. Don't forget to mark them left and right. Now, lay them on the insole silk side up and trace around them with a ball-point pen and cut them out.

The secret miracle part is to go to your nearby fabric store and buy a couple of feet (no pun intended) of naugahyde. I promise no nauga's will have to die for this step. There I go again. I bought the black, it resembles thin-shiny leather on one side and white fabric on the other. Don't be deceived, this stuff is tough. Lay

the size pattern on the white side and cut them out. Now you have insoles all over the place.

You then lay a piece of waxed paper on a flat surface in case of a glue spill. Lay down the factory insole, foam-side down against fabric side up and smear with an even coat of glue from a tube of glue-all.

Then lay the shiny black surface of the naugahyde onto the glue, leaving the white side up.

The last step is to put one more sheet of waxed paper on top of your insole, sandwich and place something fairly heavy on top. Steady as she goes.

Let this set-up overnight. Next day, slide them into your boots and take off. If the fit isn't snug enough, put a felt insole beneath our custom insole.

Thanks for such a good magazine. Keep going, never stop and don't look back.

P.S. I took this newly constructed article next door to see what my neighbor thought of it. After I had pried a newly opened brewski out of his meat hook with a large screwdriver he started reading. When he had finished reading, he wadded everything up and threw it across the table.

"That's your trouble he said," if people ask you what time it is, you tell-em how to build a watch. You could have said this whole thing in two paragraphs."

I told him, "You'd push little chickens in the creek," and he said, "There's nothing running around here EXCEPT the creek."

As I helped myself to one more brew he said. "Why don't we just manufacture the damn things and make ourselves rich instead of this Dr. Whoever?"

I said "It might take a little work," and he said, "If you're gonna cuss around here you can just hit the road." As I stepped off the porch I heard his head hit the table. So much for critics.

H. Bruce York, Camano Island, WA

The last word

Baseball: It's still the American sport

By John Silveira

April 3rd begins yet another baseball season. It used to be known as the “national sport.” These days, however, many people claim the national sport is either football or basketball and, although I still prefer baseball, I’m afraid they may be right. But if they are, it’s not because baseball’s changed, it’s because *we* have

In legend, the game was invented by Abner Doubleday, a Civil War hero, thus making it an all-American game. In truth the game is a derivative of an 18th century English game variously called rounders, feeders, and base ball (two words). But no one plays rounders anymore, not even the British, making today’s baseball as “American” as apple pie, which is, by the way, another item that first appeared in Europe.

Baseball differs from basketball, football, and every other sport in ways America once differed from Europe. It’s the “individual’s” sport. Where other games have plans and playbooks unique to each team, and everybody’s got to play according to the book, baseball has few plays, and what plays it has are pretty much the same from team to team (e.g., backing up first base or taking the relay on throws from the outfield to home plate). In other sports, if you get traded from one team to another, you have a whole new set of plays to learn and memorize. In baseball, once you know the basics of the game, you can step into a lineup anywhere in the world.

Another difference is the way the players score in those other games. In theory everyone can shoot in both basketball and hockey, but in practice most aren’t expected to attempt to score very often. You feed the star; you support him. In football, with its offensive, defensive, and special teams, only a few designated players are expected to score; a player can have a long career and not only never score a point, but never even touch the ball. In baseball, on the other hand, everyone gets a turn in the batter’s box (let’s forget this little aberration the American League came up with called the designated hitter rule).

In baseball no one can help you bat, no one can help you field. You’re on your own. There are no picks, no blockers. Each man is expected to take his try at being a hero, even if he’s mediocre. Bucky Dent didn’t pass his bat to a better Yankee hitter on October 2, 1978, in the American League playoff game, although there were certainly better batters,

including Reggie Jackson, in the lineup. Dent stepped up, took his turn, and broke my heart with a homer to left field. If it had been a basketball or hockey game, he would have passed off to a Jordan or Bird, a Hull or Gretzky.

But such heroics, which are the mainstay of America—I mean baseball—are the exception in all those other sports.

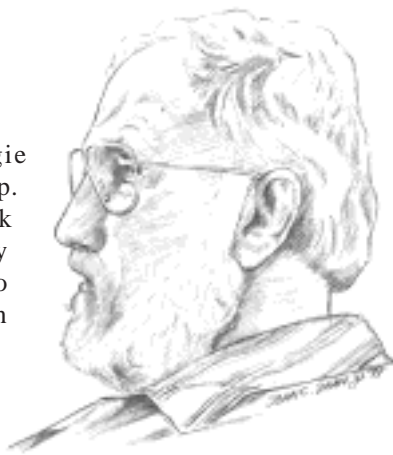
Baseball’s All-Star Game is also the only all-star game that makes any sense. That’s because baseball is a game of individuals, assembled into a team. Basketball’s and hockey’s all-star games, and football’s Pro Bowl, deteriorate into shootouts that bear little resemblance to real play. All-stars in those sports don’t even play well. Does anyone remember when the NHL was six teams and the All-Stars—the best players from the other five teams—played the Stanley Cup winner each year? The all-stars usually lost.

But imagine a team made up of Ruth, Gehrig, Williams, Aaron, Mays, Koufax, etc. They could take to the field together with no prior preparation and be the greatest team that ever played.

Although baseball is played throughout Latin America, only the Japanese embrace it the way Americans have. There in the land of the samurai, where warriors lived and died for the shogun but the individual warrior was held sacred, the baseball player is the 20th century samurai. It makes sense that they are obsessed with the game while the French, English, and Germans are not.

Last of the reasons baseball is so American is that anyone can play it. It’s Everyman’s game—men big and small. At their highest level basketball and football are played by giants most of us can never identify with. But baseball’s Hall of Fame is filled with men built just like you and me.

Baseball is what America was—individuals, frontiersmen, and entrepreneurs. Basketball, football, hockey, and even soccer are what America is becoming—teams, bureaucracies, and corporations. It’s logical that it was invented in America when she was young. It also makes sense that basketball and football were invented later, as society changed. But if baseball, in its American version, had not been invented when it was and where it was, it could not have been invented at all. Δ



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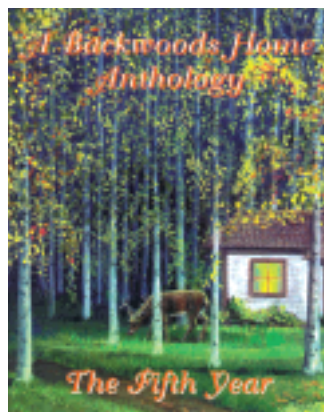
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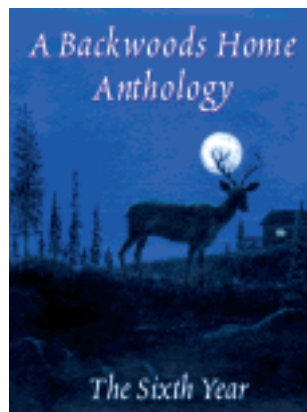
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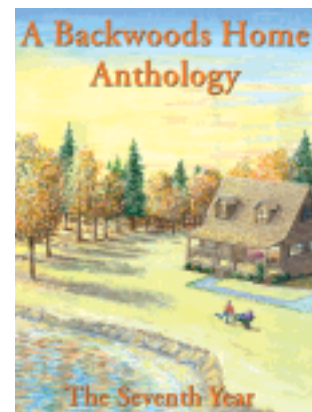
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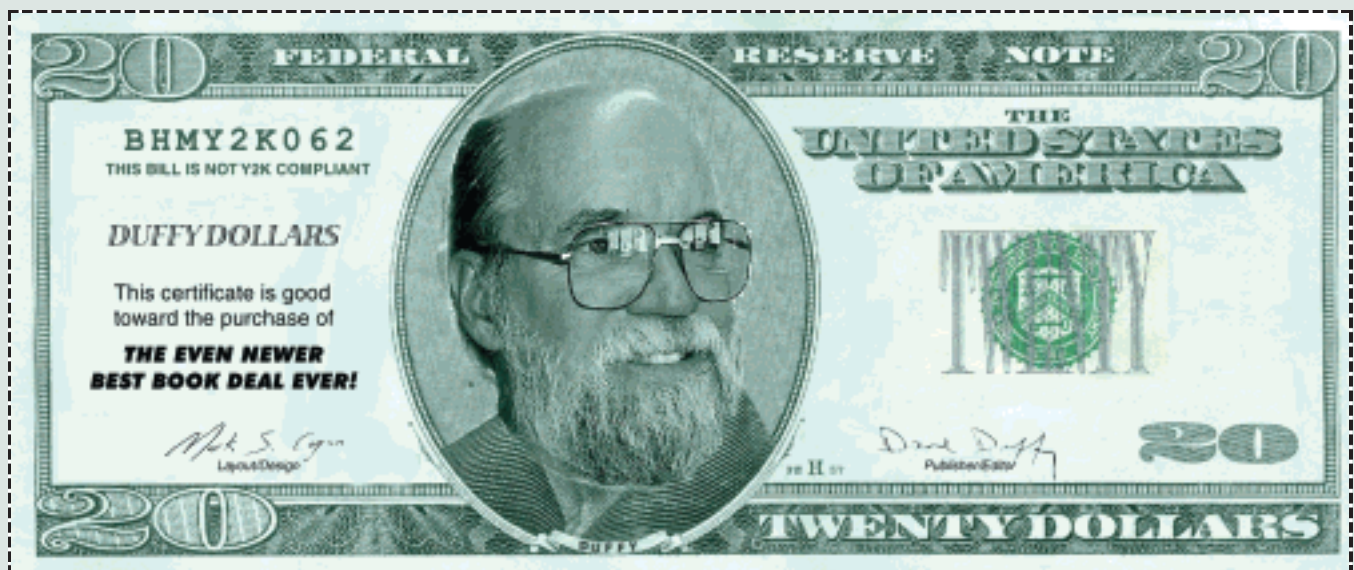
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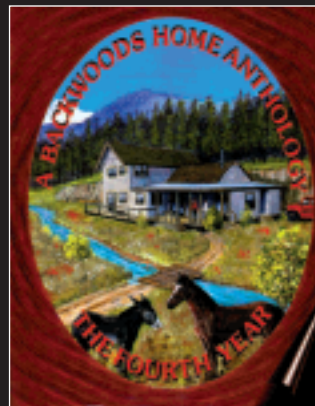
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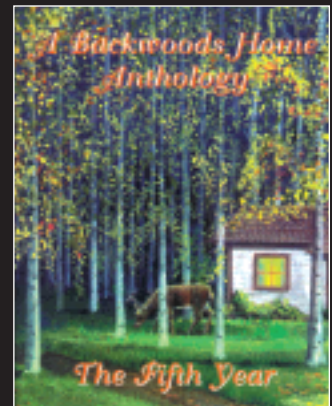
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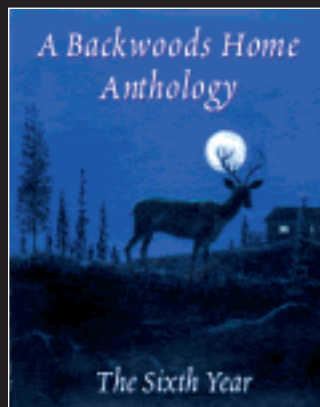
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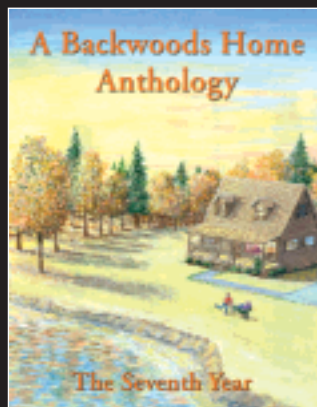
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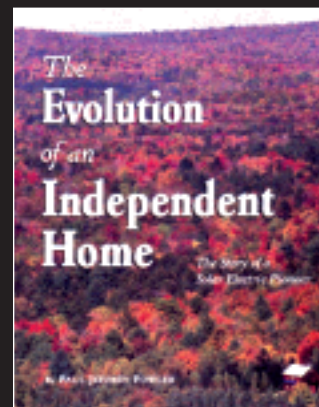
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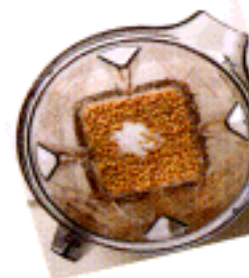
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